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January 1984

# IowaMedicine

Journal of the Iowa Medical Society



**the old order  
changeth...page 8**

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# Iowa Medicine

Volume 74 Number 1

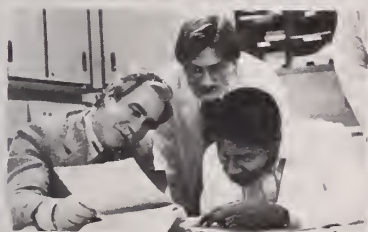
Journal of the Iowa Medical Society

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## ABOUT THE COVER

IowaMedicine



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**ABOUT THE COVER** — John H. Gay, M.D., retiring president of the Polk County Medical Society, left, talks with two young men pursuing careers as physicians. Michael Toth, senior osteopathic student in Des Moines, center, and W. L. Booker, M.D., second-year family practice resident at Broadlawns Medical Center, discuss matters with Dr. Gay, a pediatric cardiologist. Beginning on page 8, Dr. Gay has written an imaginary and provocative conversation between a veteran physician and a neophyte. It may be close to the mark; see what you think.

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This Journal is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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## PRESIDENT'S PRIVILEGE



**W**ELCOME to our renamed Iowa Medical Society publication. As you see, the new name is IOWA MEDICINE. We hope this short, descriptive title meets with your approval. It follows the pattern of many sister states — MINNESOTA MEDICINE, COLORADO MEDICINE, MICHIGAN MEDICINE and so on.

With our new name the editors have said — acknowledging factors of budget and time — they will rededicate themselves to supplying information that is interesting, timely, sometimes provocative, always trying to establish a record of what is happening in IOWA MEDICINE.

Your thoughts, ideas, opinions, etc., are important in this process. If you have something to say on a medical issue or subject, send it in. We want to provide an open forum.

If you were the IMS president, starting a new year, what admonitions, or resolutions, if you prefer, would you set for yourself which might be worthy of emulation by your colleagues? Here are six of mine:

- *To be as concerned and compassionate with my patients as my personal capacity will allow.*

- *To be as willing and as patient as I can in supplying explanation and allaying the fears of those who come to me.*

- *To keep my knowledge and skills as up-to-date, again, as my personal capacity will allow.*

- *To be fair and open in making my charges, knowing I have this obligation to my patients, to myself — and to those others concerned about the high cost of medical care.*

- *To be active, not only in my own practice, but also to budget time, and not grudgingly, to those broader activities that raise and sustain the positive identity of medicine.*

- *To do all this — also keeping in mind the important needs of my family — and those individuals who work with and for me in delivering medical care.*

The job is as tall as Jack's beanstalk. But it deserves our best effort.

A handwritten signature in dark ink that reads "Erling Larson M.D." The signature is fluid and cursive, with a large, stylized "E" and "L".

Erling Larson, M.D.  
President





MERCY HOSPITAL MEDICAL CENTER

DES MOINES, IOWA  
PRESENTS

# **“UPDATE ON NEUROLOGY: PAIN MANAGEMENT”**

**THURSDAY,  
FEBRUARY 16, 1984**

**8:00 A.M. TO 4:00 P.M.**

**GUEST FACULTY:**

**JOHN BLASCHKE, M.D.**

CLINICAL PROFESSOR OF MEDICINE  
UNIVERSITY OF OKLAHOMA  
OKLAHOMA CITY, OKLAHOMA

**TOPICS: “PROSTAGLANDINS IN PAIN:  
NEW INSIGHTS INTO ANTI-  
INFLAMMATORY THERAPY” and  
“ENDORPHINS IN PAIN: SOME  
STRATEGIES IN MANAGING  
CHRONIC ARTHRITIC CONDITIONS”**

**JON BLASCHKE, M.D.**

IMMUNOLOGIST  
McBRIDE CLINIC  
OKLAHOMA CITY, OKLAHOMA

**TOPIC: “NON-STEROIDAL ANTI-  
INFLAMMATORY DRUGS”**

**BENJAMIN CRUE, II, M.D.**

CLINICAL PROFESSOR OF SURGERY  
(NEUROLOGICAL)  
UNIVERSITY OF SOUTHERN CALIFORNIA  
LOS ANGELES, CALIFORNIA  
PAIN CENTER DIRECTOR  
NEW HOPE PAIN CENTER  
ALHAMBRA, CALIFORNIA

**TOPIC: “NON-SURGICAL TREATMENT  
OF PAIN”**

**ROBERT KUNKEL, M.D.**

CLEVELAND CLINIC FOUNDATION  
DEPARTMENT OF INTERNAL MEDICINE  
CLEVELAND, OHIO

**TOPICS: “MIGRAINE HEADACHE”  
and  
“CLUSTER HEADACHE”**

**RICHARD SALIB, M.D.**

DIRECTOR, ORTHOPAEDIC SECTION  
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MINNEAPOLIS, MINNESOTA

**TOPIC: “LOW BACK PAIN”**

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## Medical Developments

# THINGS YOU SHOULD KNOW

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### **1** MALPRACTICE NEGOTIATIONS

Matters related to the IMS/Aetna Liability Insurance Program continue under close scrutiny by the Medical Legal Committee. Aetna has asked for a 32% premium increase effective 2/1/84. Study of the program experience and financial needs is being made with help from an actuarial consultant.

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### **2** MEDICAL STAFF FORUM

A forum for hospital medical staff representatives has been authorized by the Iowa Medical Society Board of Trustees to be held with the 1984 IMS House of Delegates. Each hospital medical staff in Iowa will be invited to name a forum representative. The session is planned Friday afternoon, May 4. Further information will be forthcoming.

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### **3** '84 ASSEMBLY ASSEMBLES

January 9 is the starting date for the second session of the current Iowa legislative biennium. All bills from 1983 remain open for consideration the coming several months. More about anticipated lawmaker activity is provided in the Question/Answer feature.

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### **4** NEW IMS FIELD STAFFER

Meredith D. Olson begins her duties this month as a member of the IMS administrative staff. Her principal assignment is that of personal contact with member physicians -- working on legislative and related matters. A graduate of the University of Minnesota, Meredith is a Des Moines native and has worked most recently with American Hospital Supply.

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### **5** CHILD RESTRAINT FOLDER

Several thousand copies of an informational folder promoting use of child restraint systems in motor vehicles have been requested by member physicians. 100 folders will be sent at no charge on request to the Society.

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### **6** JANUARY SURVEY PROJECT

Selected Iowans with young children will be surveyed by telephone this month by the Center for Health Services Research at the U. of I. College of Medicine. Queries will cover health status and Iowa availability of certain maternal and child health services. The study stems from a legislative mandate and is supported by a grant from The Commonwealth Fund.

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### **7** LOOKING AHEAD TO '84 HOUSE

County medical societies should begin thinking about the 1984 session (May 5 & 6) of the IMS House of Delegates. Delegate selection, resolution development, candidate consideration, district caucuses need to be kept in mind the next several months.

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### **8** FUTURE TRAVEL IDEAS

Two INTRAV adventures are available to IMS member physicians later this year. A May 23 to June 5 excursion to Spain and Portugal is set, also planned in 1984 is a July 6 to 19 Orient-Express trip to Vienna, Venice and Paris. More info is available from the IMS.

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# The Old Order Changeth

JOHN H. GAY, M.D.

Des Moines, Iowa

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*"I know, a lot of us wonder what we'll have to do to survive in that kind of market." So says the medical student. "There will always be a place for knowledgeable, caring and honest doctors." So answers the experienced physician. Read what else they have to talk about.*

---

HE WAS YOUNG, a student in the middle years of medical school. I had known him for 25 years, since he was a baby. After his father died two years ago, he had come visiting in my home for a few hours occasionally, especially during breaks at school. His father had been a close friend. Today, the lad's somber voice had a slightly pleading quality. "Where do you think medicine is headed?"

"I'm not sure." There was a pause, followed by, "But your own practice of medicine will probably go in the direction you want it to go, within limits. Why do you ask?"

"Well, at first I thought I had it made when I got accepted to med school — my grades weren't the greatest, you know. I've done pretty good, and I thought after my residency. . . ." His voice trailed off. He shifted unfocused eyes to the wall behind me.

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The author is in the private practice of pediatric cardiology in Des Moines. He will complete his service as president of the Polk County Medical Society this month.

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"You'd hang out the proverbial shingle and live happily ever after?"

"Exactly," he said, with a faint twinkle in his eyes. "In fact, a lot of us are really concerned about what we'll do when we get out. There's so much uncertainty — rumors about what it'll be like in a few years. . . ." He eased forward in the chair, picking nervously at a fingernail. "Doctors advertising, hospitals setting up clinics in malls, HMO's."

"Things aren't quite as simple as you thought they'd be a few years ago, are they?"

"No, at least I don't think so. I wanted to become a doctor because I wanted to help others and I still do, but it seems so confusing and complex now."

"The fact that doctors enjoy a high income and an equally high social status didn't enter into it? Most of us have nice memories of kindly ol' Doc Smith who could always be counted on to help — but Doc also lived in the biggest house and drove the biggest car in town. And when the good doctor spoke, people listened. I know you want to help, but 'doctorin' has certain advantages."

"Well, sure, I kind of expected to have a good income, but . . ."

"Listen, you'll do all right, but it might not be as much as you were expecting. I think the days of instant financial success are gone for most of us. A generation ago you could open the door of your new office, and if you treated



people well, all you had to do was step aside and let the patients in."

He laughed, a delighted laugh, and leaned back in the chair.

I continued. "Well, it may not have been that easy, but you could do well in a short time. Now things are much more complicated, as you say. For one thing, you'll be graduating with about 16,000 others. I read recently there are nearly half a million active physicians in the U.S. The mean age is 46 — only 46. These doctors will be practicing another 20 years or so. I'm no statistician, but I think I agree with the reports of a physician glut in a few years. And don't forget the attraction the U.S. holds for bright foreign doctors — they represent 20% of U.S. physicians. In short, there's more competition for the patient, and it'll get worse."

"I know, a lot of us wonder what we'll have to do to survive in that kind of market. I'm afraid I might make the wrong decision, choose the wrong practice setting, something like that."

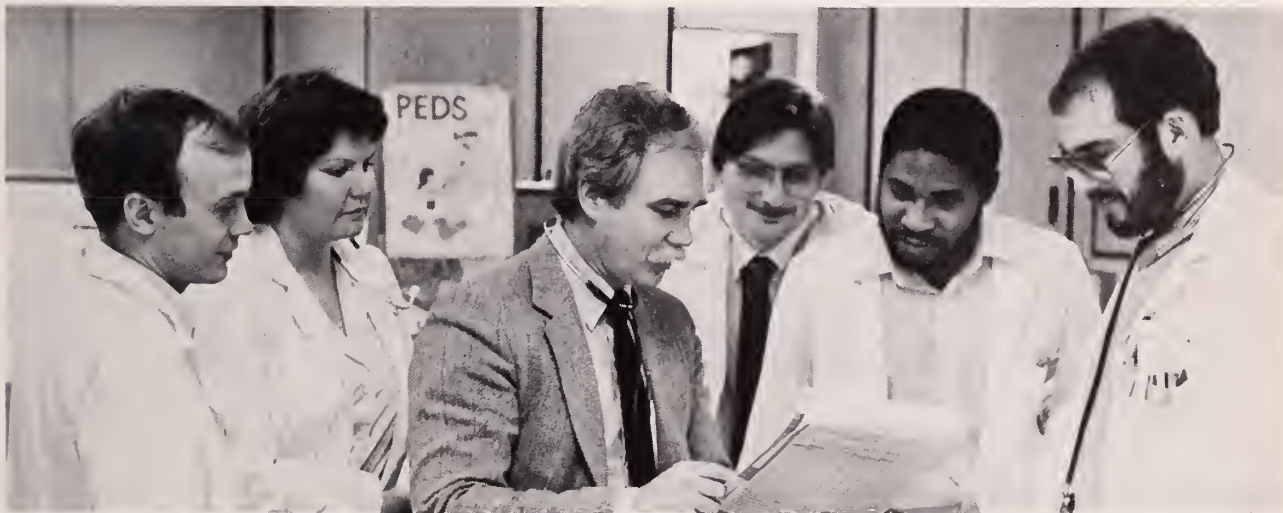
"YOUR CHOICES certainly are much wider than when I started out. It was private practice, or academics, or the service. Not much else. Now you've got much more, most of them called by their acronyms — HMO's, PPO's, IPA's — I can't keep them all straight. There's considerable pressure on medicine, both on the institution and on the individual, to do things differently, especially cheaply."

"Because it's too costly."

"It's also the finest in the world." I thought I sounded a bit defensive.

"Agreed, but when did American medicine cross the line and become too expensive for its own good? It's almost an embarrassment to us as students. At least," he flushed slightly, "that's what some in med school are saying."

"You have some good points, and they concern doctors my age also. We're confused, too, probably more than you, because there's a real temptation to blame the doctor for the predicament. Did we all go wrong while doing such things as discovering hundreds of antibiotics, beating polio, making tremendous progress



**LOOKING TO THE FUTURE** — As with many Iowa physicians, author John Gay, M.D., has opportunities to teach, counsel and just plain talk with young people pursuing health care careers. Dr. Gay's thoughts here emanate from these experiences. In the above picture are, from left, Bill Andresini, PA student; Shirley Hartman, M.D., family practice resident; Dr. Gay; Michael Toth, third-year osteopathic student; William Booker, M.D., family practice resident, and Stanton Bree, third-year osteopathic student.

---

against leukemia, doing heart surgery in small kids? These are American contributions from the American system of medicine."

"And, yet, many people cannot afford American medicine any more."

**"I** HEAR WHAT you're saying, but don't just blame the doctor, okay? Any idea what percent of total health care costs goes to physician services?"

"No, not that much, say 30%?"

"Excellent guess, my good friend! It's around 20%." (I had just read that figure the other day.) "And the percent of the GNP for total health expenditures is a nip under 10%."

"Putting it that way, it doesn't seem so bad. But big business does complain!"

"There's no question that employee health care has been cutting into profits. It's felt at all levels, certainly in my own office, with our employee health insurance premiums going up and up. But big business relates to medicine as only it knows how — as a business. It wants cheaper health care and quality is not much of a consideration. What's important is the profit margin at the end of the year. And so they turn to the expedient, not the expensive. Frankly, I can't blame them."

"You seem to dislike some of the newer options that big business likes."

"If you mean HMO's, no, I don't like them. You see, in our traditional system of medicine — the kind that easily made American medicine the best in the world — the doctor gets paid more when he does more. Of course, that leads to some excesses, and there are a few unscrupulous doctors around. But consider the opposite, which is the HMO system — the doctor gets paid more for doing less."

There was silence. I could see my young friend was thinking it through. Then he surprised me with, "You'd better not get sick in an HMO."

"Exactly what I've concluded, too. You see, both systems have their obvious built-in defects, but there's a lot to say for not having financial constraints when you are aggressively seeking a diagnosis or using the latest in

treatment management. Now, don't get me wrong. There are plenty of good doctors who do good jobs in HMO's, but I think the philosophy leaves some patients at great risk."

"We're asked to be so many things nowadays — being a good doc as well as being a businessman."

"An artist, a scientist, a businessman. Because the physician finds medicine to be part art, part science, part business. Hopefully, we'll never be asked to play the game of medicine and move medical chess pieces across an economic board, sacrificing some here to get an advantage there. But I sense that some hospitals and some businesses may get caught up too much in the financial maneuverings of health care and see it more like a game."

"You sure aren't very encouraging, you know. Somehow, though, you don't seem very pessimistic." He looked at me steadily, waiting for an answer.

"No one feels comfortable with change, and as Tennyson said, *'the old order changeth'* rapidly at this time. I think the changes we have been experiencing the last few years in medicine are more profound than those in the last three decades or so. But remember this, there will always be a place for knowledgeable, caring and honest doctors — and you will be one of those. And I'm depending on you to keep American medicine the best as it changes with the times."

"That's a tall order." His voice seemed to have a more mature quality. "Any suggestions?"

**"T**HREE THINGS. Get the best training you can! Do what's right for your patients! And get involved! Become active in organized medicine in the hospital, and in the county and state. Make sure medicine goes in the right direction."

"Speaking of getting involved," he quickly glanced at his watch and began to get up, "I've got a date with Diane. Better run — and thanks!"

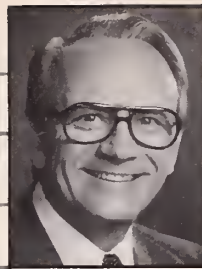
He left quickly. I stared absentmindedly at an AMA pamphlet on DRG's — another set of initials I'm sure I won't like either.

---



Marion E. Alberts, M.D.

## COMMENTING EDITORIALLY



### SEE OUR NEW NAME

**T**HE JOURNAL OF THE IOWA MEDICAL SOCIETY will be 73 years old in about six months. We originated on May 18, 1911, when the House of Delegates of the Iowa State Medical Society voted to establish an official journal. The first issue was published in July of that year. Before, in 1906, the Society contracted for five years with the *Iowa Medical Journal* to publish its official transactions.

Many tumultuous years were experienced by the original *Iowa Medical Journal*. It survived, off and on, however. It finally merged in 1914 with the JOURNAL OF THE IOWA MEDICAL SOCIETY. From August 1853 to June 1858, the *Iowa Medical Journal* was published in Keokuk, "... by the faculty of the Medicine Department of Iowa University." There were monthly issues the first year, then bimonthly the second and third years, and quarterly the fourth year.

In 1867, Dr. J. C. Hughes published the *Journal* for two years. In 1895, it was resumed under the direction of Dr. J. W. Kline of Fort Dodge. In 1900, the *Journal* was sold to Dr. E. E. Dorr of Des Moines, who published it independently until its purchase and merger by the Iowa State Medical Society.

Our Society's JOURNAL has had a regular life since 1911. The editorial leadership has rested in the hands of each specific scientific editor for a reasonable time. The following physician members of the Iowa Medical Society have served in this capacity for the years noted:

David S. Fairchild, M.D.	1911-1928
Ralph R. Simmons, M.D.	1928-1937
Lee Forrest Hill, M.D.	1937-1946
Everett M. George, M.D.	1946-1961
Dennis H. Kelly, M.D.	1961-1971
Marion E. Alberts, M.D.	1971-present

The present managing editors are employees of the IMS administrative staff. They have the skills needed to assemble the JOURNAL. Donald Neumann and Polly Lynch have furnished these services for nearly 15 years.

This month we submit our editorial wares under a new monicker. We have become IOWA MEDICINE — even though in doing so we retain our historical designation beneath.

You will observe some changes inside. The design of our standing heads is new — hopefully conveying a contemporary and sprightly feeling, while preserving the appropriate professional flavor. As months pass we expect to try more new design and content ideas. Our goal, quite obviously, is to give you an interesting publication in an attractive format.

Dr. David S. Fairchild, the first editor of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, had this to say in 1909: "The JOURNAL OF THE IOWA STATE MEDICAL SOCIETY is the most important link in binding the profession with an efficient functioning body."

We believe that! Tell us if you agree, or if you don't! We want you to be the forum for IOWA MEDICINE — as we are now called. — M.E.A.

### COMING FULL CIRCLE

**T**IMES CHANGE, but not all that much. As testimony, we present these excerpts from speeches made a half century ago by two presidents of the Iowa Medical Society. One is by Charles J. Saunders, M.D., in speaking in 1923 before the 72nd annual session of the Iowa State Medical Society. The other is by A. P. Stoner, M.D., in a presidential talk before the Polk County Medical Society. Both talks were

(Please turn to page 12)

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## COMMENTING EDITORIALY

(Continued from page 11)

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published in the JOURNAL OF THE IOWA MEDICAL SOCIETY. — M.E.A.

*"We have ceased to be individual practitioners. Up until the present generation the practice of medicine was purely individualistic. The physician's responsibility ended with his duties to the patient without any particular concern for society at large. We face today a broadening conception of the functions of medical service in its relation to social needs. The social structure of our civilization depends upon proper functioning of the health and sanity of our people, and we as physicians who hold the closest relations to the views, to the intimate lives and thoughts of the people, must play a larger part in the*

### Letters to the Editor

#### COMMENT RE ONCOLOGY

Dear Editor:

While I was flipping through the pages of the JOURNAL OF THE IOWA MEDICAL SOCIETY, November 1983, I was surprised by your definition of an "oncologist." You said that an oncologist is a physician who treats people who have cancer which is determined to be

*disposition of individual problems that contributes an integral part of the public existence."* — A. P. STONER, M.D.

*"... It is our common observation that in recent years there has been an increasing tendency on the part of the members of our profession to confine their efforts to some one of the specialties. Admitting this to be true, the question naturally arises — 'Is the community at large properly served? Have we too many specialists and too few general practitioners?'"*

*"It would be better if the newly graduated physicians would practice general medicine for a sufficient length of time to become familiar with the signs, symptoms, and causes of the diseases which are prevalent in the community. In this way he could broaden his vision and lay a better foundation for any special line of work which he might elect to follow afterwards."* — CHARLES J. SAUNDERS, M.D.

responsive to chemotherapeutic agents. If this was correct, the oncologist would be called a medical oncologist or a chemo-oncologist.

For your information there is a radiation oncologist or radiation therapist who treats different types of tumors with radiation therapy.

I sincerely hope that this error would be corrected in the next edition of the JOURNAL. — Hamed H. Tewfik, M.D., Professor and Director, Division of Radiation therapy, University of Iowa.

#### IMMUNIZATION SCHEDULE

Dear Editor:

Thank you for sending me a copy of the November issue of JOURNAL OF THE IOWA MEDICAL SOCIETY. I was pleased with the colorful format and, in general, with the editing of the article. We do have a problem, however, which was brought to my attention by Dr. Laverne Wintermeyer of the State Health Department today. The immunization schedule as printed left out some important ages and

otherwise has some errors. I have submitted a corrected outline for you to submit in the next month's JOURNAL. Your cooperation in making the immunization schedule (See Below) an accurate one is appreciated.

Again, I enjoyed working with your JOURNAL on this project. — Brenda M. Cruikshank, M.D., F.A.A.P., Assistant Professor, Department of Pediatrics, University of Iowa.

*Editor's Note: The revised immunization schedule will appear in all of the "Join the Well Child Team" folders requested by physicians and others.*

#### IMMUNIZATION SCHEDULE

AGE	IMMUNIZATIONS
Age Two months, four months, six months, 18 months,	DTP (diphtheria, tetanus, pertussis) OPV (oral polio) and four to six years
Age 15 months	MMR (measles, mumps, rubella)
Every 10 years after age four to six years	Td (tetanus and diphtheria booster)



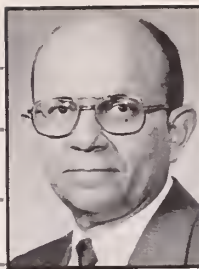
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Clarence H. Denser, Jr., M.D.

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## **QUESTIONS AND ANSWERS**

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### **ACTIVISM ESSENTIAL**

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*The following brief comments are a reminder the Iowa General Assembly resumes deliberations this month. Dr. Clarence Denser is chairman of the IMS Committee on Legislation. He is a Des Moines pathologist.*

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#### **What general comments might you give on the 1984 Assembly which convenes January 9?**

In 1984 we will see much of what we saw in 1983. Many groups, some of which hold views counter to those of Iowa medicine, are seeking to influence the legislative process through aggressive at home constituent activism in each legislative district.

#### **Financial considerations will surely dominate, right?**

Under the Democrat majority the budgeting process is an annual proposition, instead of biennial. We know the state fiscal picture is very tight despite some improvement in the employment picture. A major budget issue will be that of raises for state employees; Governor Branstad has said this must occur, involved is as much as \$47 million. Funding here and elsewhere will be a challenge.

#### **Health care issues have been discussed in recent IMS member communications. Updated legislative developments will be communicated, right?**

Yes. As indicated this fall in our 7 legislative briefings, understanding and participation by Iowa physicians is so important. We will keep members informed of new developments. We have said Society priority will be given to 4 bills: support for use of child restraint systems; opposition to mandated benefits and coverages (involving 2 bills), and opposition to further restrictions on dispensing.

#### **How can good legislation be enacted?**

By conscientious effort on the part of legislators to receive and evaluate information. If these elected officials never hear the views of their constituent physicians, the position of medicine won't be represented. Knowing your legislator and communicating with him or her is essential.

#### **What if an Iowa physician wants information on a bill or issue?**

Encourage him or her to contact IMS headquarters for such information. We will be happy to assist any physician who wants to identify and become acquainted with his/her legislators.

#### **Anything else?**

Please acknowledge the previous efforts of our legislative contact physicians. We appreciate and need their ongoing participation. Remember the grass-roots nature of the legislative process. We need this kind of involvement by many physicians if good legislation is to emerge.

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## BRIEF SUMMARY

### PROCARDIA (nifedipine) CAPSULES

For Oral Use

**INDICATIONS AND USAGE:** I. **Vasospastic Angina:** PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation; 2) angina or coronary artery spasm provoked by ergonovine; or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and/or adequate doses of beta blockers.

II. **Chronic Stable Angina (Effort-Associated Angina):** PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

### CONTRAINDICATIONS:

Known hypersensitivity reaction to PROCARDIA.

**WARNINGS:** **Excessive Hypotension:** Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out. In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and, if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery.

**Increased Angina:** Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate or from increased demand resulting from increased heart rate alone.

**Beta Blocker Withdrawal:** Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible rather than stopping them abruptly before beginning PROCARDIA.

**Congestive Heart Failure:** Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event.

**PRECAUTIONS:** **General:** **Hypotension:** Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

**Peripheral edema:** Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

**Drug interactions:** Beta-adrenergic blocking agents. (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates. PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

**Digitalis:** Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization.

**Carcinogenesis, mutagenesis, impairment of fertility:** When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

**Pregnancy:** Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys.

**ADVERSE REACTIONS:** The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2%, and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication. Additionally the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

**Laboratory Tests:** Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

**HOW SUPPLIED:** Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59 to 77 F (15 to 25 C) in the manufacturer's original container.

More detailed professional information available on request.

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*Quotes from an unsolicited  
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are dizziness or lightheadedness, peripheral edema,  
nausea, weakness, headache and flushing, each occurring  
in about 10% of patients, transient hypotension in about  
5%, palpitation in about 2% and syncope in about 0.5%).



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\*Procardia is indicated for the management of:

- 1) Confirmed vasospastic angina.
- 2) Angina where the clinical presentation suggests a possible vasospastic component.
- 3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

Please see PROCARDIA brief summary on adjoining page.

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# Transplant and Dialysis: The Cost/Benefit Question

THOMAS J. BLOMMERS, Ph.D.,  
BARBARA SCHANBACHER, R.N., B.S.N., and  
ROBERT J. CORRY, M.D.  
Iowa City, Iowa

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*Progress in the treatment of renal disease is described by the authors. Advances in transplant methodology and technology have been significant. The difference in quality of life for the transplant patient exceeds substantially the long-term dialysis patient.*

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A MAJOR CONTRIBUTING FACTOR to one of the most widely discussed topics of the past few years, the rapid increase in health care costs, is the spiraling expense of caring for patients with chronic renal disease. The National Kidney Foundation estimates that no fewer than 150,000 residents of Iowa and western Illinois suffer from some form of renal disease, which accounts for 10% of all patient visits to the physician's office.<sup>1</sup> In effect, renal disease causes more deaths than car accidents and extracts untold amounts of money not only from the health care system, but from society as a whole in the form of lost productivity.

In spite of the prevalence of renal disease, the overwhelming majority of the money spent

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on its treatment goes for the care of those relatively few patients who have end-stage renal disease (ESRD). According to the Health Care Financing Administration, of the more than 13 million Americans afflicted with renal disease, in 1982 only 70,000 were being treated for end-stage disease, a number which they feel will double by the year 2035.<sup>2</sup> There are basically two types of treatment for ESRD patients, kidney transplantation and long-term or chronic dialysis. Indeed, ESRD patients are unique in that, through dialysis, they can survive indefinitely, unlike other types of transplant patients who cannot live without the transplanted organ.

These two modalities of treatment cost in the neighborhood of \$23,000 during the first year. However, after the first year, the successful transplant patient will see the yearly costs drop to a maximum of \$5,000, whereas the annual expenses of the patient on chronic, in-center dialysis continue the same or, in the case of continuous ambulatory peritoneal dialysis, may go even higher (Table 1). Many of these dialysis patients depend on county, state and federal funds, thus adding a greater burden to society as a whole.

Despite these glaring cost differences, the number of ESRD patients on chronic dialysis is increasing while the number of transplants remains constant (Figure 1). Several factors account for this seemingly unfitting situation. First of all, with improvements in technology, the number of dialysis centers is multiplying rapidly, thus making their services evermore

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT  
SCIENTIFIC PRESENTATION FOR THE MONTH OF JANUARY 1984

available to patients at a local level. These centers are able to treat older and otherwise higher risk patients that in the past would not have been treated. With more ESRD patients surviving indefinitely on chronic dialysis, each year their numbers grow exponentially. In addition, as a result of the numerous blood transfusions while on long-term dialysis, a number of patients begin to develop cytotoxic antibodies against potential donor organs, thus rendering them poor risk candidates for transplantation.

#### NO GAIN IN ORGANS

In contrast, the availability of suitable cadaveric organs for transplantation has remained the same or decreased over the years, primarily owing to the reduction in number of motor vehicle accidents as a result of lower speed limits (Figure 2). Although there probably are enough kidneys to supply the best potential transplant recipients, more kidneys are needed overall to improve the transplant

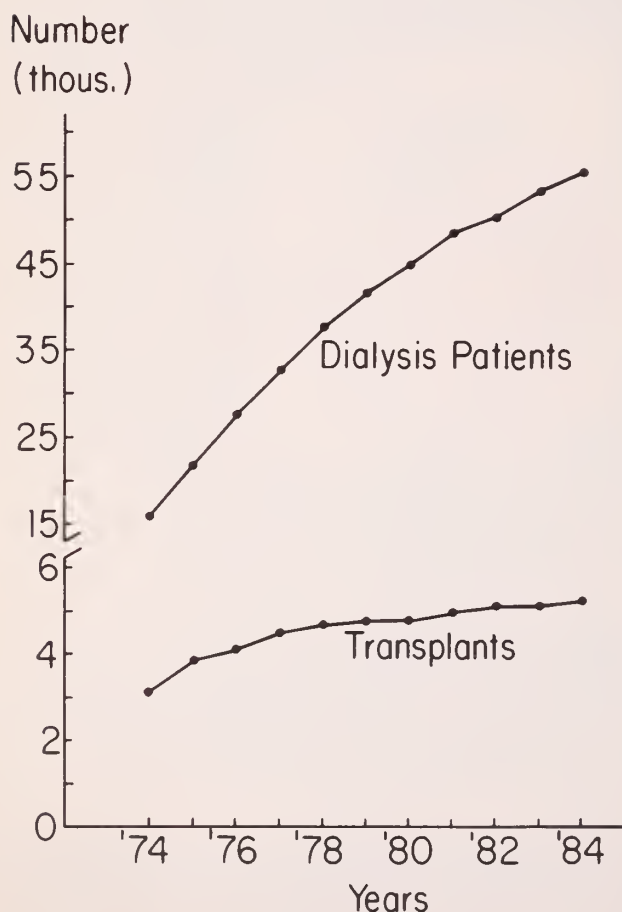


Figure 1. Annual number of dialysis and transplant patients since 1974 and projected number for 1984.

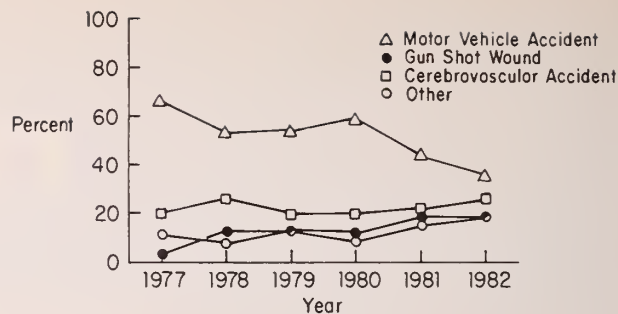


Figure 2. Cause of donor death over time. Motor vehicle fatalities are decreasing while other causes of death remain constant.

chances for the harder-to-match potential recipients (Table 2).

Recent advances in renal transplantation are providing an appealing and viable alternative to long-term dialysis. The newly developed ability to match HLA-DR antigens greatly enhances cadaveric graft survival. Another breakthrough has come in utilizing living related donors. Administration of donor-specific transfusions from the donor to the potential recipient greatly improves graft survival. A recent report in the January, 1983, Bulletin of the American College of Surgeons indicates that, in one study, when subsequent cross-matching was negative, the chances of graft survival exceeded 90%.<sup>3</sup> These effects coupled with improvements in the computerized organ

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*"As transplantation becomes more common, the need for donor organs will continue to grow, and it is only through active public participation in organ recovery programs that this need can be met."*

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sharing bank are serving to expand the donor pool and providing well-matched kidneys for the recipients.

In addition to the improvement in matching ability, the much heralded immunosuppressant, Cyclosporine, was finally approved on September 2, 1983, by the Food and Drug Administration for use in humans. This new drug, which suppresses the body's rejection mechanism without interfering greatly with its ability to fight off exogenous infections, can increase cadaveric graft survival by as much as 20%. Cyclosporine may also make possible transplantation for less well-matched recipients.

TABLE 1  
COMPARISON OF AVERAGE COSTS PER PATIENT

Treatment	1st yr (\$)	2nd yr (\$)	3rd yr (\$)	All Subsequent yrs (\$)
Home hemodialysis	22,760	13,237	13,237	13,237
In-center hemodialysis				
Notional	24,800	24,800	24,800	24,800
Iowa	32,000	32,000	32,000	32,000
Continuous abdomino-peritoneal dialysis	14,000 —	14,000 —	14,000 —	14,000 —
	44,000	44,000	44,000	44,000
Cadaver donor transplant	23,400	3,000	1,500	750
Living-related transplant	20,700	1,500	500	500

TABLE 2  
KIDNEY USE IN IOWA

	1977	1978	1979	1980	1981	1982
Kidneys recovered in Iowa	36	60	57	61	69	65
Kidneys received from other transplant centers	20	24	26	45	36	40
Kidneys transplanted	39	52	50	77	61	54
Kidneys sent to other transplant centers	10	25	15	18	30	39
Kidneys not used	7	7	18	11	14	12

#### QUALITY OF LIFE

A significant advantage that the successful transplant patient has over the long-term dialysis patient comes from improvement in the quality of life. Freed from severe dietary restrictions and the constant necessity of being near or hooked to a dialysis machine, the transplant recipient finds greater potential for rehabilitation. An analysis by Rosenbaum *et al*<sup>4</sup> revealed that 88% of transplant recipients are fully rehabilitated. Contrasting with this report, Roy *et al*<sup>5</sup> found that only 48% of ESRD patients under age 60 years were able to continue working after initiation of home hemodialysis treatments. Although many dialysis patients are quite satisfied with their treatment, many take a dim view of their numerous restrictions, and most would be hard pressed to compare their life styles favorably with those of the successful transplant recipient.

With the new advances in methods of matching and the increased survival rates that they and Cyclosporine are producing, the criteria for transplant candidacy are becoming less stringent. Consequently, many patients who previously would not have been considered for transplant may now be candidates. Patients under the age of 65 years who in the

past were thought to be borderline, should now be reevaluated for possible transplantation. When adding to the technological and methodological advances, the tremendous cost advantage and improvements in quality of life that the successful transplant recipient enjoys, reassessment of possible candidates can only seem more prudent. Every effort should be made to increase the awareness of the public as well as the local medical community.

#### PUBLIC PARTICIPATION

As transplantation becomes more common, the need for donor organs will continue to grow, and it is only through active public participation in organ recovery programs that this need can be met.

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# Pseudocholecystitis

JAMES A. PETERSON, JR. M.D., F.A.C.S  
Clinton, Iowa

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*Patients with epigastric pain and positive oral cholecystograms may be referred for operation when, in fact, there is no biliary disease. The most common cause for this "pseudocholecystitis" is peptic ulcer disease which is often detectable only by gastroscopy. A thorough history and, when indicated, endoscopy should identify these patients and prevent unnecessary or inappropriate operations.*

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ORAL CHOLECYSTOGRAPHY has been invaluable in the diagnosis of biliary disease. It is especially useful when patients do not present with "classical" symptoms. However, over the years the oral cholecystogram (OCG) has become so infallible its results are frequently accepted without question. False negatives have long been known to exist, and tests like sonography and duodenal aspiration often help to resolve those situations. Isotope studies offer the promise of even greater accuracy.

*But what about false positives?*

The following cases illustrate the fallacy of committing patients to operation solely on the basis of seemingly conclusive radiographic results.

**Case 1** — A 56-year-old man with severe inoperable coronary artery disease was evaluated for acute abdominal pain, nausea, and vomiting. OCG produced nonvisualization of

the gall bladder. An upper gastrointestinal series showed an acute duodenal ulcer. Sonography was unavailable at the time. When referred for operation, the patient could not report any symptoms truly suggestive of biliary disease; instead everything pointed to a chronic peptic ulcer. For this reason, plus his high operative risk, we declined operation. Two months after the ulcer healed, a repeat OCG showed full visualization of the gall bladder with normal contractility after a fatty meal, and no calculi.

**Case 2** — A 73-year-old man in excellent health developed acute epigastric pain shortly after shoveling snow. He sought medical attention 3 days later after no improvement. No nausea, vomiting, or belching were reported. His workup confirmed no cardiac involvement. Tenderness was present in the midepigastrium. An OCG showed nonvisualization of the gall bladder while the UGI series indicated "duodenitis." When referred for cholecystectomy, the patient could not relate any symptoms truly consistent with biliary disease, and the tenderness had totally subsided, having, in fact, been confined to the abdominal wall. Sonography was negative for calculi. It seemed strange that an elderly patient with diagnosed acalculous cholecystitis should be so symptom-free. Therefore it was decided to treat him empirically with a 2-month course of Tagamet® and an unrestricted diet. During that time he remained completely asymptomatic. Two weeks after completion of the medical course, gastroscopy revealed 4 3mm ulcers in the post-bulbar duodenum, plus a mild stricture of the pylorus from probable previous inflammatory episodes. He underwent antrectomy and vagotomy and recovered uneventfully. The gall bladder was carefully

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The author is in the private practice of surgery and is associated with Medical Associates in Clinton, Iowa



inspected at operation. It was found completely normal and left in place.

#### COMMENT

The failure of the gall bladder to visualize after a double-dose of contrast is taken by many physicians as proof that a patient with epigastric pain has active gall bladder disease. The presence of a "normal" UGI series reinforces that impression. Nonetheless, it is essential for the consulting surgeon to review the patient's symptoms — or, more importantly, the *lack* of symptoms — in detail. The ultimate responsibility for avoiding an unnecessary or wrong operation rests solely with the surgeon. As always, the key is a careful, discerning history to detect those patients whose symptoms do not coincide with the x-ray findings.

The phenomenon of pseudocholecystitis may take different forms as illustrated above. Every surgeon probably will encounter a patient who seems to have subacute cholecystitis only to find at operation a subhepatic abscess from a ruptured, displaced appendix. In the one case seen by this author, the OCG produced nonvisualization of the gall bladder although there was absolutely no prior history of biliary symptoms. At operation, in the face of gross contamination, we elected to leave the gall bladder in place. Eight months later a repeat OCG showed normal visualization, no calculi, and prompt contraction following a fatty meal bolus.

While such a case is easy to understand conceptually, other situations require a look at the recognized causes for apparent malfunction of the gall bladder during an OCG: failure to swallow the tablets; vomiting; retention of the tablets in the stomach; diarrhea or rapid transit through the small bowel; jaundice; previous cholecystectomy; cholecystitis, and obstruction of the cystic duct. In almost all cases of true biliary disease, the history, physical examination, laboratory data, and the double-dose approach eliminate all other causes but the last two.

*Almost.*

If contrast is delayed in leaving the stomach — for whatever reason — it will not reach the gall bladder in sufficient concentration in time for routine filming. Swallowing the tablets too late the preceding evening is almost too obvious an example, but it emphasizes the time-

dependency of the OCG. What about a physiologic delay?

Delayed gastric emptying does not occur *only* with advanced pyloric stenosis and stricture. Inflammation in the antrum and/or duodenum can very easily accomplish the same result, and in our society the most common cause for that inflammation is peptic ulcer disease. Therefore, we believe in those cases where delayed gastric emptying is suspected, preoperative gastroscopy is essential. If a thorough history is taken, there should be few, if any, negative examinations. After all, the physiology is not new, only the realization that peptic ulcer disease (and gastritis as well) may have more subtle effects than had been suspected previously. And who wishes to remove a normal, disease-free gall bladder?

#### CONCLUSION

It is suggested when active inflammation is present in the stomach and/or duodenum a timed test, such as the OCG may be seriously compromised. Therefore, the use of gastroscopy is encouraged whenever there is any suspicion of a false-positive result.

#### University of Kansas Medical Center

*presents*

Barbara J. DeLateur, M.D., University of Washington-Seattle

James H. McMaster, M.D., University of Pittsburgh

at

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and

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# A Surgical Idea For the Ingrowing Toenail

SIDNEY ROBINOW, M.D.,  
A. IVAN PAKIAM, M.D., and  
DOUGLAS J. WEEDMAN, M.D.  
Des Moines, Iowa

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*A technique of skin and soft tissue excision is advocated for the common problem of ingrowing toenails. The amount of excision depends on the severity of the condition. Primary wound closure shortens the period of healing. Results have been successful in 95% of cases. Consideration of the procedure is suggested.*

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**O**NCHOCRYPTOSIS — ("hidden toe") — or ingrowing toenail is a common, disabling condition. Its limited consideration in the medical literature is noted. There appears to be a need to discuss what many regard as a mundane condition.

The basic problem arises for a variety of reasons. It occurs when the lateral part of the toenail grows downwards into the soft tissue. This creates an inflammatory reaction and infection is apt to compound the problem. In severe cases, the nail edges then grow inwards thus creating the "scroll" deformity.

Like most disease problems, prophylaxis should be the first consideration. Patients

should be taught to trim the nail straight across. In cases where the nail has started to dig in, the use of cotton wool placed under the nail at the lateral edge will usually alleviate or cure the problem.

Surgical therapy involves simple avulsion of the nail with aftercare as indicated here. This is said to solve 80% of those afflicted. If, however, the nail avulsion needs to be repeated, the cure rate decreases significantly.<sup>1, 2</sup>

Radical treatment has been that of total ablation of the nail and nail bed with, in some instances, shortening of the phalanx. The complication of nail splinters growing from remaining nail remnants must be dealt with surgically. The most common operation is to remove lateral wedges of nail and nail bed. The problem of nail remnants still applies.

It occurred to Sidney Robinow, M.D., (now deceased) that if an adequate wedge of skin plus underlying soft tissue could be removed lateral to the ingrowing portion, the improved contour of the entire distal nail would preclude further ingrowing. Applying this thinking, appropriate wedges of soft tissue have been excised under ring block local anesthetic and tourniquet provided by a Penrose drain. The wounds are sutured directly instead of allowing them to granulate and heal by second retention (Figure 3). The results have been gratifying (Figures 1, 2, 4, 5).

In reviewing the literature, Vandenbos and Bowers<sup>3</sup> approached the problem in a similar fashion. They cite success in 55 patients. However, the wounds were left open to heal on their own.

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Now deceased, Dr. Robinow was chief, orthopaedic surgery at Mercy Hospital Medical Center. Dr. Pakiam is chief, plastic surgery, Veterans Administration Medical Center, Des Moines. Dr. Weedman is a surgical resident at the VA Medical Center.



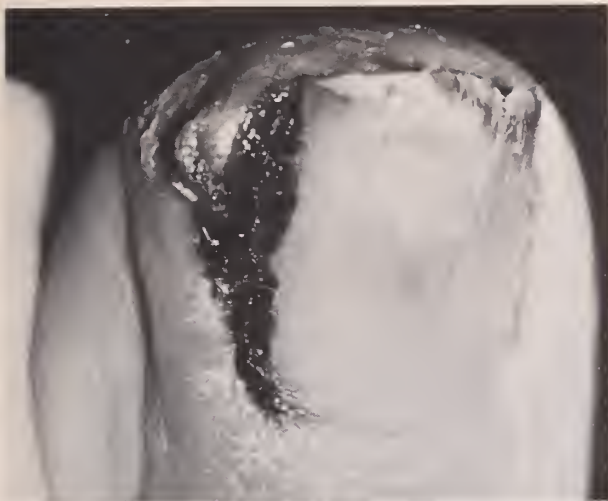


Figure 1. Superior view to show ingrowing of lateral side of great toe.



Figure 3. Oblique view after excision of suitable ellipse of skin and soft tissue.

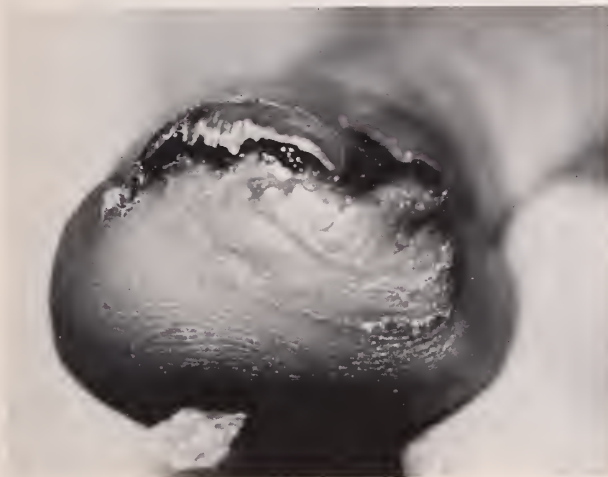


Figure 2. "End on" view of Figure 1.



Figure 4. Superior view 6 months after operation.

#### OPERATIVE TECHNIQUE

A ring block utilizing 2% Xylocaine plain is instituted. The foot is then washed with phisoex or hibiclens and draped. The skin ellipse is noted with a skin marker. The area included varies according to the severity of the condition and the ellipse starts behind the root of the nail and is widened near the ingrowing point. The area of skin removed is often more than 3 cm x 1.5 cm. A wedge of soft tissue is excised so that direct skin apposition can be accomplished. Closure is by interrupted nylon sutures, 4-0 or 3-0. A light bandage is applied. An injection of 0.5% Marcaine is used as a ring block to prolong analgesia and we have found

*(Please turn to page 22)*



Figure 5. "End on" view 6 months after operation.

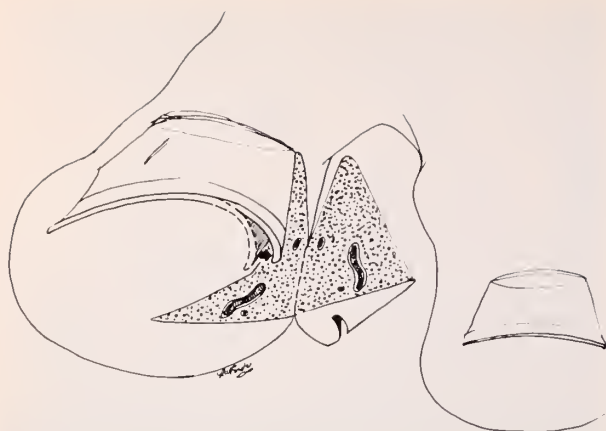


Figure 6. Schematic diagram to show wedge excision of soft tissue and skin.

that when the sensation of pain returns, patients who have had similar procedures indicate the pain is significantly less.

The patients are advised to keep their toes elevated and to use ice to diminish swelling and pain. They graduate to soft slippers or footwear with open toes. Sutures are removed at approximately 10 days. When pain diminishes soaks in warm saline or hydrogen peroxide are advised.

#### RESULTS

We have operated on 40 patients to date. In only two patients have the operations had to be repeated because not enough tissue was removed — a 95% rate of success.

## WHY MEDICINE?

*Oral interviews conducted by the Iowa Medical Society Historical Committee contain interesting excerpts. Here are comments from William H. Myerly, M.D., Spencer, in an interview with John G. Thomsen, M.D., Des Moines.*

**On selecting medicine as a career:** "Going into medicine never entered my mind until my father became ill with carcinoma of the bladder. One morning my father was to be examined by some Mayo Clinic urologists. My mother and I had nothing to do. We wandered into a museum in Rochester, an old home which has now given way to a parking lot. This

#### ADVANTAGES

1. A simple, soft tissue operation can be performed on an outpatient basis (Figure 6).
2. The operation can be repeated if not enough tissue has been removed.
3. There is no nail or nail bed interference unless the cause is fungal when the nail is avulsed along with the soft tissue wedges. Long term lotrimin is started topically.
4. The problem of nail splinters is avoided.
5. The incidence of pain and morbidity is decreased.

#### ACKNOWLEDGEMENTS

Sidney Robinow, M.D., was a well respected orthopaedic surgeon in Des Moines. He died before this paper was produced. We acknowledge his help and encouragement in its preparation. It is our custom to refer to this procedure as the "Robinow Operation."

Richard Forster, M.D., is acknowledged for his help with the illustration, Figure 6. Mrs. Peggy Baker is thanked for secretarial assistance.

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museum had a series of surgical procedures done in wax. Up to that time, I had been absolutely nuts about airplanes and thought I would be an aeronautical engineer. The surgical procedures looked so fascinating, I decided on the spot to become a surgeon and that was the turning point."

**As for significant advances in medicine:** "To me the outstanding experience, even today, was when we were students at Iowa and the first penicillin came out. I was a senior and, as I recall, the dosage was 10,000 units. I remember Dr. Korn bringing a chart of a patient with pneumonia to the pit and showing this precipitous drop of the fever. It was just like a waterfall. I'll never forget that day."



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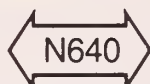


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Richard M. Caplan, M.D.

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## OUR MAN IN EDUCATION

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### MORTALITY TABLES AND EDUCATIONAL PLANNING

PAGES FILLED WITH columns of numbers might not be your cup of tea — nor mine, either. And yet, they must hold a slight fascination for me because every now and then I stop when I am leafing through an article and glance at such an array of data. That happened recently while I was scanning a report entitled "Blacks and the Health Professions in the 80's." The bulk of the report dealt with educational processes, admission rates, sources of funds, and so on, in health professions schools. But the particular data that caught my eye dealt with age-adjusted death rates of whites and blacks for various causes of death.

The tables displayed numbers for the deaths by enumerated diseases in each decade beginning in 1950 for whites and blacks, males and females of the USA. Once I let my eye alight on these numbers, I found some interesting data about the different death rates. Most recently, for example (1979), black males had an annual death rate of 224 per 100,000 from malignant neoplasms, while white males had only 161. Black males died at a rate of 30 per 100,000 from cirrhosis of the liver, whereas the figure for white males was only 16.

Interesting variations appeared according to sex. For example, in 1979 black women died of cirrhosis at a rate of 14/100,000 compared to 7/100,000 in white women, and for either race, then, the figure is about half of that for the corresponding males. The rate for death by homicide in women of either race (14/100,000 in blacks and 3/100,000 in whites) was far less than the 71/100,000 in black men and 10/100,000 in white men.

Another way to read the table, which I found interesting, involved changes over time. Certainly distressing is the death rate from malignant neoplasms of the respiratory system, essentially the same for females of either race in 1950 (4.6 in white women and 4.1 in black women), whereas the rate in 1979 had quadrupled to 17.3 in white women and 18.1 in black women. There, race seemed to make no difference but almost surely women's increasing use of cigarettes caused the tremendous change. Women still have a long way to go, though, before catching up with the death rate for respiratory system cancer in men (79 in blacks and 58 in whites), but they seem to be trying hard.

The data for suicide were interesting. In 1950 the white to black ratio among males was 18.1 to 7.0, and in 1979 it was 18.9 to 12.7. In other words, the suicide rate among white males had remained about the same but had almost doubled among black males. In the case of women, the situation was somewhat comparable, with white to black women in 1950 at 5.3 to 1.7, respectively, and it had increased by 1979 to 6.4 and 3.0 — a slight increase for white women but almost doubling for black women. As always, the data show that females attempt suicide far more often than males, but are much less successful at it.

A final item was especially stunning, because I had recently re-read Bernard Shaw's wonderful play, "The Doctor's Dilemma," in which tuberculosis figures prominently. The glorious story told in the recent data display was this: for males the 1950 death rate (23 in whites and 80 in blacks) had decreased by 1979 to the vanishing point — so greatly that the data were no longer adequate to be trustworthy. For females during that period the white to black ratio was 10.2 and 51.2 in 1950, dwindling drastically through 1960 and 1970 so that

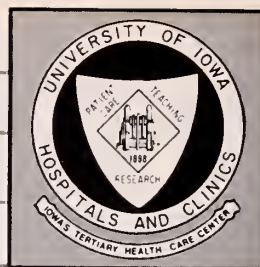
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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.



## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### ADRENERGIC DRUGS FOR THE TREATMENT OF ASTHMA

**A**DRENERGIC DRUGS are the oldest class of pharmacologic agents used for asthma therapy. Use of these agents has evolved in this century as new synthetic compounds have been introduced. The most recent addition to this class of antiasthmatic agents is a group of long-acting,  $\beta_2$ -receptor-selective drugs with little  $\beta_1$ -receptor effect and virtually no  $\alpha$ -receptor effect. These newer agents are also more orally bioavailable and longer acting than their predecessors. Some of these  $\beta_2$ -receptor-selective agents are currently marketed in the U.S. and others may be available here in the future. Older, shorter-acting, less receptor-specific drugs continue to be available as well (Table I).

#### ROUTES OF ADMINISTRATION

Adrenergic drugs have been given by intravenous, intramuscular, subcutaneous, inhaled and oral routes of administration. There are considerable differences between these routes in terms of doses required, efficacy, and side effects produced.

Intravenous administration is used exclusively in the treatment of the severely dyspneic patient. The rapid attainment of high plasma concentrations by this route ensures not only prompt delivery of the drug to the lungs, but also a relatively high incidence of side effects. These include tachycardia, widening of the pulse pressure, hyperglycemia, hypokalemia, and skeletal muscle tremor.<sup>1</sup> Myocardial ischemia and myocardial infarction have been re-

ported with intravenous isoproterenol,<sup>2</sup> but not with the more selective  $\beta_2$  agents terbutaline and albuterol. While intravenous terbutaline has been used on an experimental basis, its routine use cannot yet be advocated. Intravenous albuterol has been used extensively in other countries but it is not currently available here.

Terbutaline and epinephrine are the agents currently available in the U.S. for subcutaneous use. Subcutaneous epinephrine has been traditionally used in emergency management of the severely dyspneic asthmatic. However, the much lower incidence of adverse effects and the greater efficacy of subcutaneous terbutaline make epinephrine obsolete.<sup>3</sup>

Oral administration of adrenergic drugs had been advocated for "prn" and maintenance therapy of the ambulatory asthmatic patient. Terbutaline, albuterol, isoproterenol, metaproterenol and ephedrine are currently marketed for oral use. Ephedrine and isoproterenol should be considered obsolete because of very limited effectiveness, and in the case of ephedrine, a high incidence of side effects. Even the remaining 3 agents have limited therapeutic usefulness because of their unreliable bioavailability<sup>4</sup> and a high incidence of side effects compared to the delivery of the same drugs by the aerosol route of administration.<sup>5</sup>

Aerosolized sympathomimetics have been used in virtually all types of clinical situations encountered by the asthmatic patient and are associated with fewer side effects than with the systemic routes of administration. Relatively small doses are capable of large bronchodilator effects. Two different delivery techniques have been used clinically. The metered-dose inhaler (MDI), which delivers a measured quantity of drug per actuation, is convenient and widely used by ambulatory patients. However, con-

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

siderable patient education and patient coordination are required for proper use.<sup>6</sup> Compressor-driven jet nebulizers have also been used and require less patient cooperation. Nebulizer administration may be advantageous in individuals who are too dyspneic to use the MDI in a carefully coordinated fashion and in young children.

The best agents available in MDI form are metaproterenol and albuterol. These agents are longer acting than the other alternatives and are roughly equivalent to one another in recommended doses.<sup>7</sup> The most appropriate drugs available in this country for use in nebulizers are metaproterenol and terbutaline. Metaproterenol is available in a solution for nebulization. While it is long acting, it is not

very beta selective and even the recommended dose (10-15 mg) can cause tachycardia and palpitations. Terbutaline is a more selective beta<sub>2</sub> agent. The solution marketed for subcutaneous use has commonly been delivered by jet nebulizer in doses of up to 2 mg. It is impractical to routinely use doses higher than this since the drug is supplied in glass vials containing 1 mg each. Selective beta<sub>2</sub> agonists such as albuterol, fenoterol, and terbutaline are available in other countries in solutions for nebulization. The doses of those agents commonly reported in the literature appear to be up to several times as potent as the above noted doses of nebulized terbutaline and metaproterenol. Introduction of nebulized albuterol or fenoterol or a better preparation of

TABLE 1  
CLINICALLY IMPORTANT CHARACTERISTICS OF SELECTED BETA AGONIST BRONCHODILATORS

Drug	Usual Route(s)	$\alpha$	Side Effects			Duration of action
			$\beta_1$	$\beta_2$	CNS	
Ephedrine	Oral	Hypertension, urinary retention	Tachycardia		Anxiety, insomnia	Long
Epinephrine	Subcutaneous	Hypertension (transient)	Tachycardia	Skeletal muscle tremor	Anxiety	< 1 hour
	Inhaled		Tachycardia	Skeletal muscle tremor		< 1 hour
Isoproterenol	Intravenous		Tachycardia, myocardial ischemia	Decreased diastolic blood pressure Skeletal muscle tremor (common) Hyperglycemia and hypokalemia (uncommon)		< 1 hour
	Inhaled		Tachycardia	Skeletal muscle tremor (rare)		< 1 hour
Isaetharine	Inhaled			Skeletal muscle tremor (rare)		Approx. 1 hour
Metaproterenol	Oral		Tachycardia	Skeletal muscle tremor		3-6 hours
	Inhaled		Tachycardia	Skeletal muscle tremor (rare)		
Terbutaline or Albuterol	Intravenous or Subcutaneous			Decreased diastolic pressure Tachycardia (probably reflex) Skeletal muscle tremor (common) Hyperglycemia and hypokalemia (uncommon)		2-4 hours
	Oral			Skeletal muscle tremor (prominent)		4-6 hours
	Inhaled			Skeletal muscle tremor (rare)		3-6 hours



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## DRUG THERAPY REVIEW

(Continued from page 27)

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terbutaline would be an important addition to the therapy of the severely dyspneic asthmatic patient.

### CLINICAL USE

Asthma is a highly variable disease. It produces a spectrum of symptoms which, based on frequency and severity, range from mild and occasional to debilitating and continuous. Consequently, clinicians are presented with a number of distinctly different clinical situations to treat. Adrenergic drugs fill a number of roles in the management of these clinical problems.

### EMERGENCY MANAGEMENT OF THE SEVERELY DYSPNEIC ASTHMATIC

Aerosolized long-acting  $\beta_2$ -selective agents appear to be excellent for "first-line" management of this clinical problem because of their convenience, rapid onset of action, and minimal side effects. Because of the difficulty dyspneic patients have in coordinating the use of metered-dose inhalers, they are best delivered via compressed-air nebulizer in this setting. In terms of bronchodilator effect, aerosolized sympathomimetics are superior to parenteral adrenergic drugs and parenteral theophylline.

In the patient who fails to respond promptly to the use of inhaled  $\beta_2$  agonist, subcutaneous terbutaline should be administered. Optimal therapy in this situation should also include the use of intravenous theophylline, guided by the measurement of serum concentrations and the addition of short-term corticosteroid therapy.

Intravenous isoproterenol may also be indicated in children and young adult asthmatics in impending respiratory failure, but it should be used only with extreme caution and in an ICU setting.<sup>8</sup> It may well be replaced by more  $\beta_2$ -receptor-selective intravenous agents in the near future.<sup>9</sup>

### AMBULATORY THERAPY

#### *Acute Bronchodilation*

All asthmatics, even those receiving appropriate maintenance therapy, experience occasional acute episodes of bronchospasm.

These may be triggered by many factors including exercise, cold air exposure, allergic antigen exposure, and viral respiratory infections. An ideal agent to treat these episodes should be potent, have a rapid onset and long duration of action, produce minimal side effects, and be convenient. Albuterol and metaproterenol by MDI are better suited for this use than all other available alternatives. Both reach maximal effect in 10 to 20 minutes and are virtually without side effects in usual doses ("2 puffs"). These agents have similar durations of effect, but are intrinsically much longer acting than other  $\beta_2$  agents available by MDI (epinephrine, isoproterenol, and isoetharine). Nebulized terbutaline or metaproterenol may be substituted in patients unable to coordinate the use of the MDI.

A slightly different but related indication is the inhibition of exercise-induced bronchospasm (EIB). Aerosolized albuterol and metaproterenol by MDI are both extremely effective in preventing EIB from occurring when they are taken just prior to exercise. Again, they are roughly equivalent to one another and superior to virtually all other alternatives.<sup>10</sup>

#### *Maintenance Therapy in Chronic Asthma*

There are 4 drug regimens which have been used for routine prophylactic maintenance therapy: 1. oral sympathomimetics (terbutaline, albuterol, or metaproterenol); 2. routine, scheduled administration of aerosol sympathomimetics (albuterol or metaproterenol); 3. oral theophylline, and 4. aerosolized cromolyn.

It is clear that in most situations, aerosolized sympathomimetic administration is superior to its oral counterpart. Aerosol therapy is associated with minimal systemic concentrations and, as a result, negligible side effects. The significant systemic drug concentrations resulting from oral drugs commonly cause annoying palpitations, tachycardia and muscle tremor.

It is more difficult to draw conclusions when albuterol or metaproterenol by MDI are compared with the remaining two regimens. Single-dose studies comparing bronchodilation and inhibition of EIB provide little insight for the control of chronic asthma symptoms. Better studies comparing the ability of each regimen to reduce the daily morbidity of chronic



asthma are needed. — Richard C. Ahrens, M.D., Assistant Professor of Pediatrics and Gary D. Smith, Clinical Assistant Professor, College of Pharmacy, and Clinical Pharmacist, McFarland Clinic, Ames, Iowa

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## OUR MAN IN EDUCATION

(Continued from page 25)

in 1979 the data were no longer reliably available.

Imagine the effect you might have produced on a practitioner at the turn of the century if you could have told him of that incredible success story about tuberculosis, and also the success stories about smallpox, syphilis, typhoid and cholera that would be taking place in the next 80 years. On the other hand, you would have had to disclose to him the sad story about deaths due to automobile trauma and heart attacks which, of course, he would have found similarly unbelievable. And consider the impact on the medical delivery system during those years — for example, from having sanatoria all over the landscape to having trauma centers all over the landscape. But one detail remains inflexible: the event of death occurs once per person. Acknowledgment of that datum might just influence how we structure some of our personal educational decisions.

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Information of Interest

## STATE DEPT. OF PUBLIC HEALTH



### HMO REVIEW NEEDS

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*This discussion has been prepared by the Division of Health Facilities of the Iowa State Department of Health.*

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**I**T MAY NOT generally be known, but the Iowa State Department of Health has a role in monitoring the quality of health care delivered by health maintenance organizations (HMO) operating in the state.

An obvious primary responsibility lies with each HMO. It must develop a quality assurance plan which relies on an internal peer review system. The quality assurance plan developed by each HMO must be approved by the ISDH as a condition of the HMO being certified by the State Insurance Department.

The HMO rule requiring a quality assurance plan is quite specific in that it requires each HMO to carry out an "... evaluation of the quality of care provided enrollees."

The rule goes on further to require that the quality assurance procedures of an HMO be monitored by the Iowa Foundation for Medical Care (IFMC) which shall look at, among other things, "The professional standards and practices of the HMO including an assessment of the quality of care provided."

The significance of this (and other HMO requirements) should not be underestimated, for it represents the first involvement of the State Health Department in the delivery of health care in the private physician's office.

The quality of care given to hospital patients is already being evaluated by the hospital medical staff, and the HMO quality assurance program may choose to utilize hospital reviews when appropriate.

However, as stated, one area that has not been subject to a structured review, is in the office practice of the HMO physician. Such a review program must be developed. This is true regardless of the structure of the HMO: medical group, staff model, or IPA. Somehow each HMO must carry out a program by which the clinical management of patients in the office is subject to review by other physicians in the same HMO, and a judgment is made.

When the State Health Department began to look at the operations of HMO's in 1983, it found that none of them had any external evaluation of their peer review program. After discussing this requirement with the HMO representatives, it became apparent there was a problem in the acceptance of the role of the IFMC by these representatives.

The HMO officials agreed with the requirement for a quality assurance program to be done internally through a peer review mechanism, and with the need to have this review monitored by an outside source. However, there emerged opposition to the use of the Iowa Foundation for Medical Care (IFMC) as the external reviewer for the following reasons:

- a. IFMC has no experience in reviewing ambulatory care or HMO's.
- b. IFMC is not sympathetic to the HMO concept, and could be hostile in its review.
- c. The IFMC would be expensive.
- d. The IFMC approach would be negative and not constructive.
- e. It is not a federal requirement, and other states do not do it.
- f. The IFMC represents the established order (within the physician community) with which the HMO's are in competition. Therefore, any

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This information on public health matters is furnished and sponsored by the Iowa State Department of Health



review by a competitor would be less than impartial.

The State Department of Health sees the following advantages in using the IFMC:

a. The Rule is specific. It has been in place since 1975, and IFMC has agreed to take on the review.

b. IFMC is already the review authority for all Iowa hospitals, including those used by each HMO. The Department sees merit in having the same review authority for ambulatory care as for hospital care. The Department would also want to avoid the prospect of having different review authorities for different HMO's.

c. The IFMC is an organization composed of

Iowa physicians. Presumably, its standards would be more reflective of the prevailing practice in Iowa than would a national or out-of-state group.

However, because of the depth of feeling expressed by the HMO representatives on this issue, the Department thought it best to seek the advice of the Board of Health.

The matter was referred to the Board of Health, and at the November 9, 1983 meeting the Board formed an *ad hoc* committee to meet with officials of the HMO's and the IFMC to see if this problem can be resolved. The committee will report to the Board at its meeting on January 11, 1984.

## November 1983 Morbidity Report

Disease	Nov. 1983 Total	1983 to Date	1982 to Date	Most Nov. Cases Reported From These Counties
Amebiasis	2	36	69	Johnson
Brucellosis	1	5	5	Linn
Chickenpox	211	5824	6483	Scattered
Compylobacter	15	331	322	Scattered
Cytomegalovirus	0	11	40	
Eaton's Agent infection	5	112	267	Johnson, Linn, Sioux
Encephalitis, virol	3	57	45	Bremer, Lee, Webster
Erythema infectiosum	2	27	247	Johnson
Gastroenteritis (GIV)	1122	11419	11144	Scattered
Giardiasis	52	306	166	Scattered
Hepatitis, A	4	28	76	Black Hawk, Linn, Muscatine, Scott
Hepatitis, B	9	81	81	Scattered
Hepatitis, Non A-B	0	38	17	
Hepatitis type unspecified	0	12	28	
Herpes Simplex	68	918	455	Scattered
Herpes Zoster	0	6	12	
Histoplasmosis	1	16	15	Linn
Infectious mononucleosis	27	184	179	Scattered
Influenza, lab confirmed	0	207	74	
Influenza-like illness (URI)	3370	36779	37701	Scattered
Legionellosis	0	6	23	

Disease	Nov. 1983 Total	1983 to Date	1982 to Date	Most Nov. Cases Reported From These Counties
Malaria	1	4	8	Appanaose
Meningitis aseptic	4	140	94	Chickasaw, Johnson, Palk
bacterial meningococcal	6	141	155	Scattered
Mumps	1	45	51	Woodbury
Pertussis	0	0	9	Mitchell
Robies in animals	10	192	365	Scattered
Reye Syndrome	0	2	5	
Rheumatic Fever	0	2	3	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmonellosis	19	319	304	Scattered
Shigellasis	6	64	67	Scattered
Toxic Shock Syndrome	0	14	4	
Tuberculosis total ill	0	60	69	
bact. pos.	0	42	51	
Typhoid Fever	0	0	1	
Venereal diseases:				
Gonorrhea	339	4180	4339	Scattered
Syphilis	1	22	31	Marion

Other Non-Reportable Diseases: Echavirus — 15, scattered; Ascariis — 1, Davis, 1, Clinton, 1, Scott; Coxsackie — 1, Dubuque, 1, Polk, 1, Scott; Histoplasmosis — 1, Jones.



## NEWS/PRODUCTS, PROGRAMS, ETC.

**NEW FROM 3-M** — 3-M has introduced a new line of Red Dot ECG electrodes with a solid gel. They stay in place, conform well to body contours, and leave virtually no gel residue. The hypoallergenic adhesive stays in place and because the solid gel column keeps its shape, there is little leakage to interfere with adhesion.

**NEW PLASTER BANDAGE** — Pearlcast<sup>TM</sup> polymer plaster bandage rolls and splints recently were introduced by 3M. This product is cleaner and molds well. The exothermic reaction is low. For more information write to Department OR83-3, Orthopedic Products Division, 3M, P.O. Box 33600, St. Paul, Minnesota 55133.

**MODIFIED SKIN STAPLER** — 3M's Surgical Products Division has introduced a modification of their disposable skin stapler which releases staples in any direction after insertion. Release of the staple by "Precise II Disposable Skin Stapler" is no longer dependent on forward or backward movement.

**AT-HOME TEST** — C. B. Fleet Company, Inc. has released to the market a do-it-yourself-at-home test kit to ascertain the presence of fecal blood. DETECATEST<sup>TM</sup> comes with adequate warning that it is not a substitute for regular checkups with a physician.

## RECENT BOOKS

**Pfizer Pharmaceuticals** has introduced the second in its series of Patient Information Publications. The first, *Learning to Live with Angina*, has been well received; over 200,000 copies have been requested. The new publication, *Learning to Live with Osteoarthritis*, is written in an easy-to-understand style. These publications may be requested from Pfizer Pharmaceuticals Healthcare Series, 235 East 42nd Street, New York, New York 10017.

**Swan, Ruth, Editor, 1983, THE HUMAN BODY ON FILE**, Facts on File, Inc., New York, New York. (This extensive atlas of anatomy is made up of some 300 detachable, loose-leaf line drawings suitable for photocopy. They are suitable for examination paper illustration or patient instruction. There are no captions directly on the line drawings. Though the price may seem steep, the value over many years of usefulness will diminish the initial cost. The

binder is very durable and the individual pages are on heavy stock paper.)

**Interested in medical history?** We recommend a series of publications available from Southern Illinois School of Medicine, Department of Medical Humanities, P. O. Box 3926, Springfield, Illinois 62708. The Pierson Museum Monograph Series consists of four monographs: (1) *Physicians to the West: Daniel Drake and the American Frontier*, (2) *David Prince: A Pioneer in Surgical Therapeutics in Central Illinois*, (3) *William Beaumont: Frontier Army Surgeon and Physiologist*, and (4) *Elizabeth Blackwell: First Woman M.D.* Also, last year, another publication came forth — *Medical Care in Pioneer Illinois* by John K. Crellin. Dr. Crellin, a medical historian, served on the staff of the Wellcome Institute for the History of Medicine in London. More recently, he has been with Duke University in Durham, North Carolina. Though this history is of medicine in Illinois from 1818 until the turn of the century, it could well pertain to Iowa.

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News About Colleagues

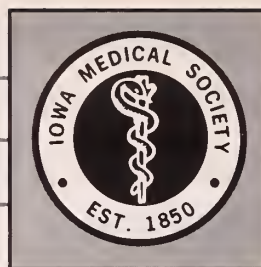
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**ABOUT**

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**IOWA PHYSICIANS**

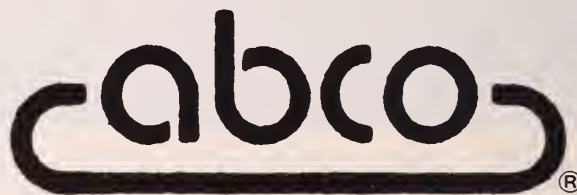
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**Dr. Cecil W. Seibert**, Waterloo, is a recent recipient of three community honors. On November 14, the Waterloo Chamber of Commerce named him "Citizen of the Year"; on November 18, Allen Memorial Hospital designated its nursing school library the "C. W. Seibert Library," and on November 27, St. Francis Hospital named its labor and delivery unit the "Seibert Birthing Center." Dr. Seibert is a past IMS president and has made many significant contributions to the delivery of health care in Iowa. . . . **Dr. David Todd** recently began an orthopedic surgery practice in

Atlantic. Dr. Todd received the M.D. degree at the University of Oregon Medical School and completed his orthopedic residency at Stanford University. He is a retired Air Force officer, having served for 20 years, mostly as a flight surgeon. . . . **Dr. Guy H. Posey** recently joined **Drs. Mark S. Taylor** and **J. S. Burgfechtel** in family practice in Sioux City. Dr. Posey received the M.D. degree at the University of Maryland and completed a family practice residency at Siouxland Family Practice Center in Sioux City. . . . **Dr. William R. Panje**, Iowa City, was a program participant at a recent

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scientific meeting of the American Academy of Facial and Plastic Reconstructive Surgery. . . . **Dr. Richard T. Honderick**, Rock Rapids, recently was named a fellow of the American Academy of Family Physicians.

**Dr. James D. Kimball**, Osceola, has accepted a faculty position at Broadlawns Medical Center in Des Moines effective January 1, 1984. A native of Clarke County, Dr. Kimball received the M.D. degree at the U. of I. and interned at Walter Reed General Hospital in Washington, D. C. He has been associated with the Clarke Medical Clinic in Osceola since 1968. Recently, Dr. Kimball was named to the board of directors of the Iowa Academy of Family Physicians. . . . **Dr. Herbert E. Gude**, Iowa Falls, recently was elected vice president of the International College of Surgeons. . . . **Dr. Boynton Woodburn**, Des Moines, has been named president and **Dr. Alf Jordan**, Sioux City, secretary-treasurer, of the newly formed Iowa

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Society of Plastic and Reconstructive Surgeons. . . . **Dr. Stephen R. Nelson**, Council Bluffs, and Iowa City physicians **Dr. Robert B. Felder** and **Dr. Peter T. Kirchner** recently were named fellows of the American College of Physicians. . . . **Dr. Milton J. Dakovich**, Des Moines, and **Dr. George H. West, Jr.**, Mason City, are recipients of special awards from the Iowa Foundation for Medical Care. Dr. Dakovich, who is director of medical education at Des Moines General Osteopathic Hospital, received the John H. Sunderbruch Award, and Dr. West, who practices internal medicine in Mason City, received the Kenneth E. Lister Award. Dr. Sunderbruch and Dr. Lister were instrumental in establishing the Foundation in 1971.

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**Dr. Veronica W. Butler** recently joined **Dr. Horace M. Don** in medical practice in Keota. Dr. Butler received the M.D. degree at Howard University in Washington, D. C.; completed a family practice residency at Providence Hos-

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pital in Southfield, Michigan, and served a 2-year internal medicine residency at Henry Ford Hospital in Detroit. Dr. Butler has been associated with the Samaritan Health Center in Detroit while working toward the master's degree in public health medical care at the University of Michigan. . . . **Dr. Clarence E. Douglas**, Belle Plaine physician for 25 years, recently was honored at an open house noting his silver anniversary. Dr. Douglas received the M.D. degree at Meharry Medical School in Nashville, Tennessee; served an externship at Flint-Goodrich Hospital in New Orleans, Louisiana and interned at Mercy Hospital in Cedar Rapids. He has practiced in Belle Plaine since 1958. . . . **Dr. Andrew C. Smith** recently joined Family Medicine Associates in Guttenberg. Dr. Smith received the M.D. degree at the U. of I. and completed his family practice residency at the Black Hawk Area Family Practice Clinic in Waterloo. . . . **Dr. Michael A. Hinz** recently joined the Fort Dodge Medical Center. Dr. Hinz received the M.D. degree at Loyola University Stritch School of Medicine; interned at St. Joseph Hospital in Chicago, Illi-

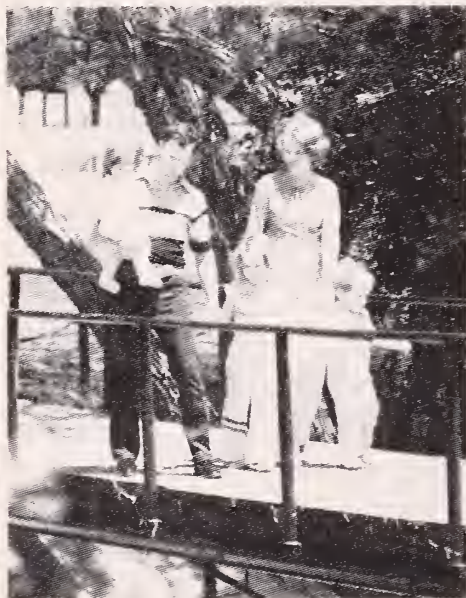
nois, and served his radiology residency at Weiss Memorial Hospital and Northwestern Memorial Hospital in Chicago. Prior to locating in Fort Dodge, Dr. Hinz served as the assistant radiologist at Forkosh Memorial Hospital in Chicago.

## DEATHS

**Dr. S. F. Yugend**, 73, Indianola, died October 27 at his home. Dr. Yugend received the M.D. degree at the University of Minnesota School of Medicine. He began medical practice in Indianola in 1943. A World War II veteran, Dr. Yugend was presented the Simpson College Achievement Award in 1973 for community service.

**Dr. Edward R. Gann**, 66, retired Sigourney physician, died November 10 at University Hospitals in Iowa City. Dr. Gann received the M.D. degree at the U. of I. Prior to locating in Sigourney, he practiced medicine at Veterans Hospital in Des Moines and at the Oakdale Tuberculosis Sanitarium.

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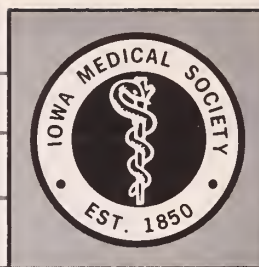
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A Monthly Commentary

## IN THE PUBLIC INTEREST



### Environment of Medicine

**B**OOK REVIEWS are not the usual bill of fare in this space. But then what we have in mind is not exactly a book and not exactly a book review.

What we do have in mind is the advocacy of a new report from the Council on Long Range Planning and Development of the American Medical Association. We refer to a 105-page document called *The Environment of Medicine*. It elaborates on a 1981 study by this Council.

Iowa physicians — and others within our borders actively interested in health care delivery — have available an abundance of printed commentary on what's here, what's needed, and what's ahead. The challenge is to select reading material that will help in forming opinions about future directions. This AMA study is worthy of such selection.

"As physicians, the members of the AMA Council on Long Range Planning and Development cannot forget that the most important scientific challenges of medicine remain impairment and disease. We are schooled to respond to these. However, effective clinical responses to impairment and disease today depend as much on environmental factors as on medical science."

This thought prefaces the AMA report. It emanates from Council Chairman Charles F. O'Donnell, M.D. What follows is succinct, objective information about (1) the general economy, (2) the demand for medical care resources, (3) the supply of medical care resources, (4) the economics of medical practice, (5) the structure of the medical care sector, (6) changing roles in the health sector, and (7) trends in public and physician attitudes.

Says Dr. O'Donnell to readers of the report: "Please keep in mind that success in responding to the environment within which the profession must provide its services may be as

important to health in America as any challenge we, as a profession, have ever faced. The challenges identified in this report deserve informed attention from us all."

Ten common themes are said to run through the report's seven environmental topics. These recurring elements include, for instance, the increasingly dynamic environment of medicine; the pressure for change stemming from rising costs; the intensity of governmental initiatives; the potency and uncertainty of medical technology as a force for change; the factors of dislocation, economic uncertainty, unexpected alliances, etc; these and other stimuli appear likely, says the report, to cause "the environment of medicine to undergo further evolution in the near future."

If it occurs, the study suggests, this evolution is likely to involve some restructuring of the medical care financing and delivery systems. But, given the uncertainties of several key environmental trends, the development of a specific forecast is difficult.

Instead of attempting predictions, the AMA Council on Long Range Planning and Development offers useful background information and some interpretations of that information as the basis upon which county, state and specialty medical societies "can develop their own perspectives on the future environment of medicine."

An incisive summary passage in the report declares that environmental changes can be viewed either as "threats" or "opportunities," depending on perspective. Forward-thinking physicians and medical organizations are said, rightfully, to have an opportunity "to take the initiative in designing the future environment of medicine for the benefit of the public and the profession."

January 1984

Iowa Medicine



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**Adverse Reactions:** Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

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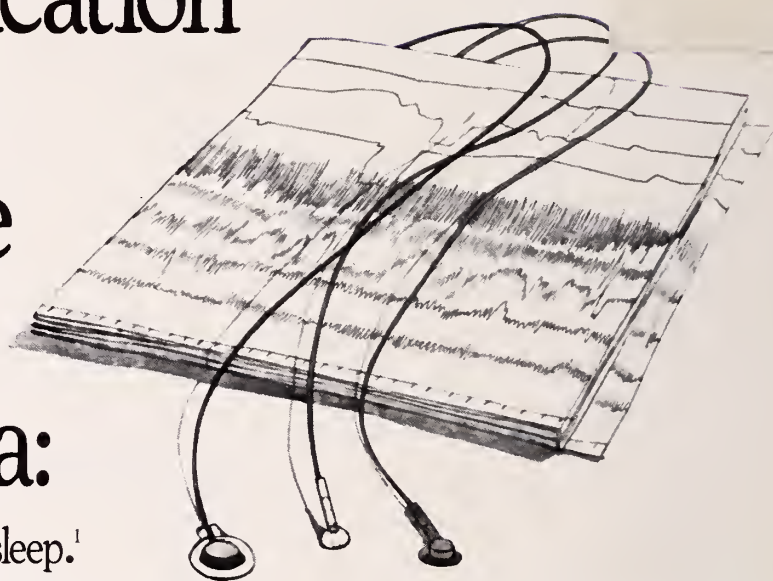


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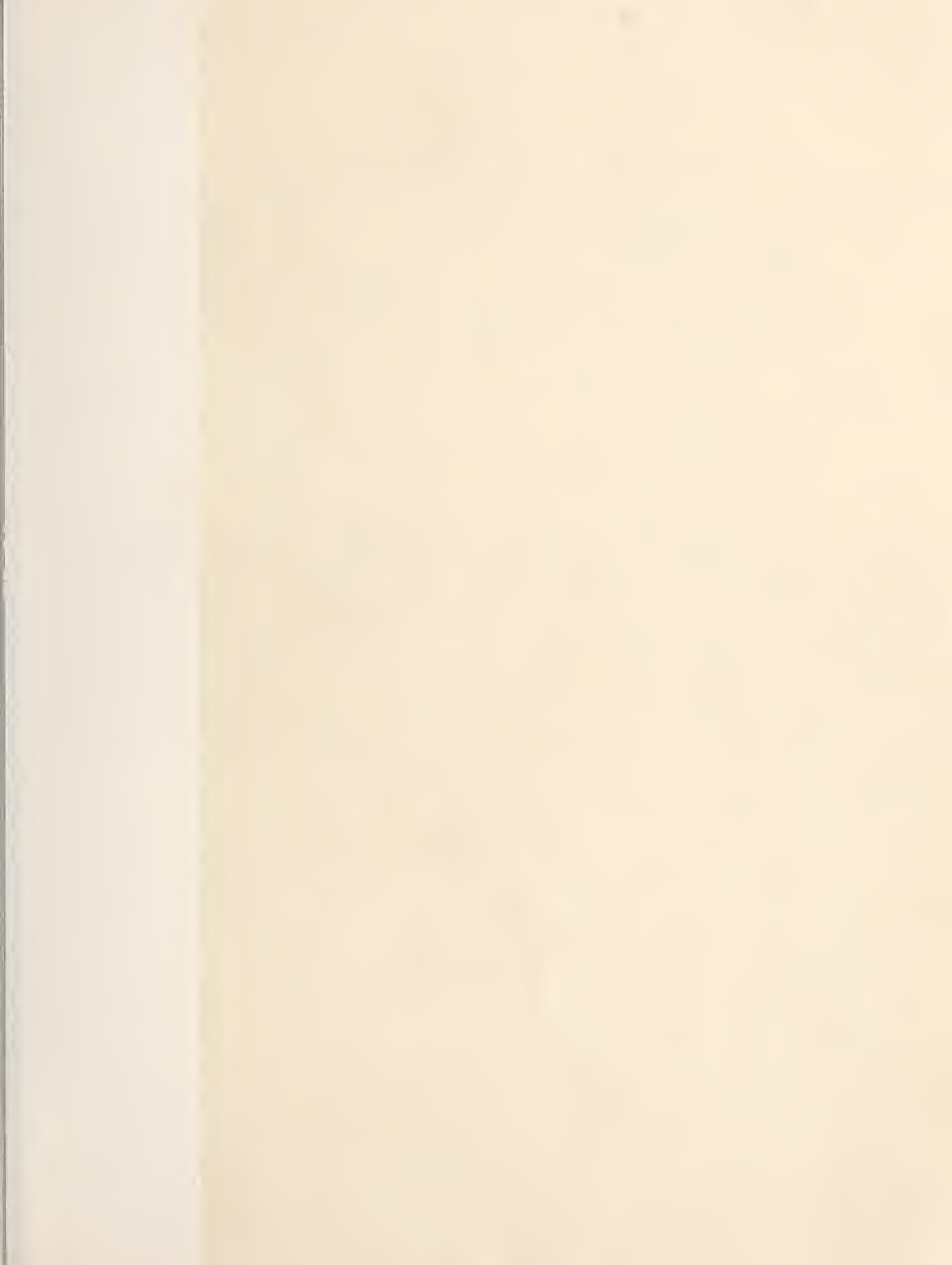
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February 1984

# IowaMedicine

Journal of the Iowa Medical Society

**zoltéotl**  
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oddes —  
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tie between art  
and medicine.  
See page 51.



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# Iowa Medicine

February 1984

Volume 74 Number 2

Journal of the Iowa Medical Society

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## ABOUT THE COVER



**ABOUT THE COVER** — Borrowing from the cover motif of the 1984 U. of I. Family Physician Refresher Course program, our February frontispiece capitalizes on the broad interests and knowledge of Richard M. Caplan, M.D., to depict the correlation between early art and medicine. Additional comment by Dr. Caplan appears on page 51. The sculpture of Tlazolteotl is part of the Robert Bliss Collection of Pre-Columbian art, Dumbarton Oaks, Washington, D.C.

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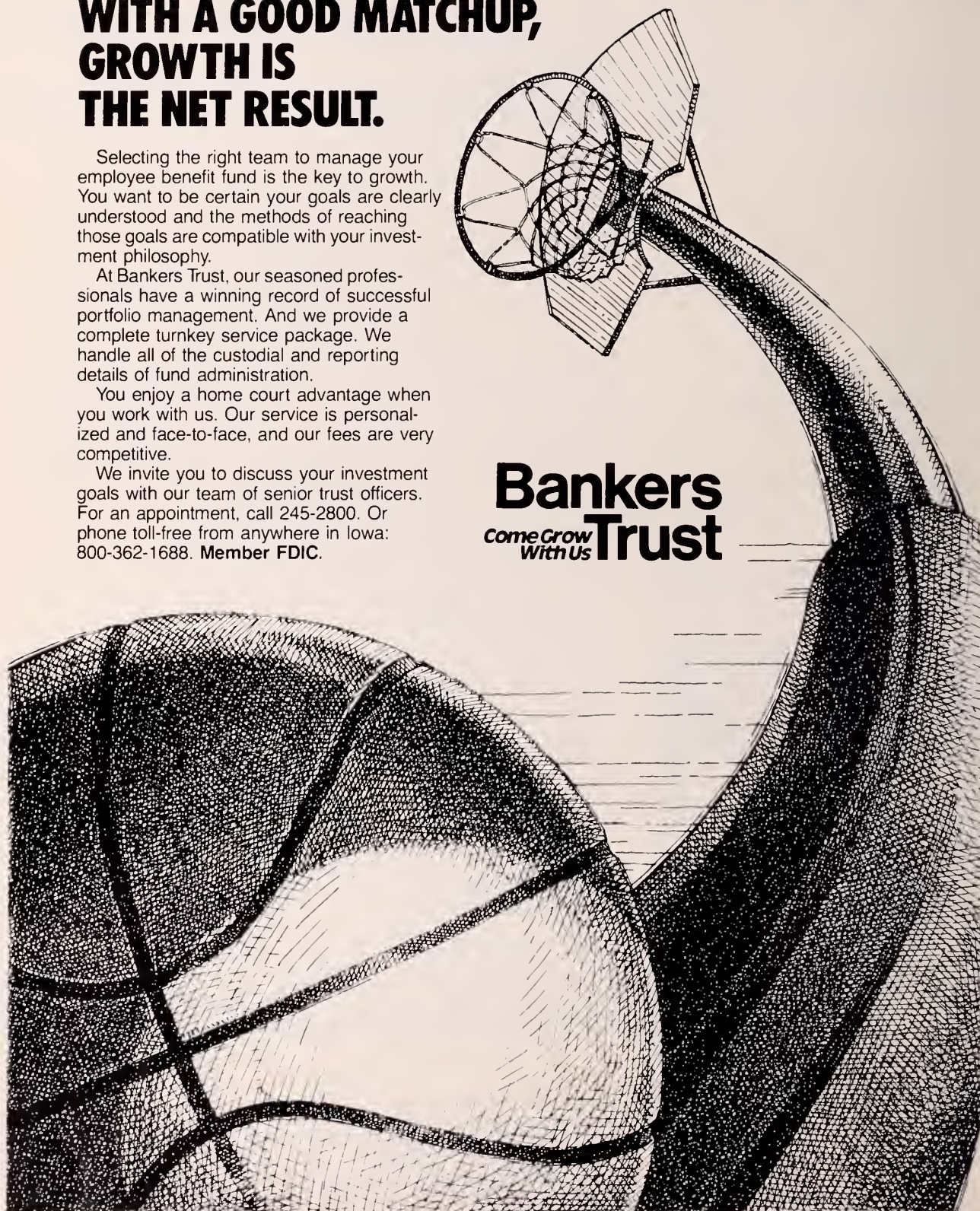
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## PRESIDENT'S PRIVILEGE



**F**EBRUARY is the time of the Valentine. Appropriately, then, may I salute the physician's spouse — *yours and mine*. Our marriage partners must be individuals of special temperament; they have to be flexible and adaptable to live with you, doctor — and your erratic schedule.

However you observe Valentine's Day — with traditional cards, flowers or candy, or in some more creative way, join me in a personal expression of love and appreciation. If, as they do, our patients deserve our best TLC, so then do our spouses.

May I salute, too, the superb efforts of our distaff affiliates. They do a great job of supporting and augmenting the local, state and national efforts of our medical profession. I refer to the county society auxiliaries, the Iowa Medical Society Auxiliary and the American Medical Association Auxiliary. The loyal members of these groups deserve my (and our) Valentine acknowledgment.

What has the IMSA been doing recently? This past fall our Auxiliary played a major role in the presentation of a highly-successful, four-part Governor's Conference on Comprehensive School Health Education. Approximately

600 persons attended these four meetings around the state. This month the Auxiliary will host the spouses of Iowa lawmakers at an annual brunch; we appreciate the recent commitment of the Auxiliary to step up its legislative activity.

My fellow physicians, please do one of the following: (a) if your spouses are active in the IMS Auxiliary, pat them on the back for the good work being done, or (b) if they are not active, please encourage them to become members this year. Call IMS headquarters if you would like special membership information sent to them or you.

How did we used to say it on Valentine's Day? *Roses are red, violets are blue, members of the Auxiliary, we really appreciate what you do!*

A handwritten signature in dark ink, reading "Erling Larson M.D." in a cursive script.

Erling Larson, M.D.  
President



---

# Outstanding CME — Right In Your Own Backyard

---

*A highlight on the March medical care scene will be the 1984 Refresher Course for the Family Physician in Iowa City. This high-quality CME event has been going on since 1946. It typically attracts about 250 physicians to the University for four information-filled days. Think about attending?*

---

**F**OR NEARLY 40 years Iowa family physicians have had a significant continuing medical education event available right in their own backyard. We refer, of course, to the Refresher Course for the Family Physician which is presented at the University of Iowa each year. The 1984 program is scheduled March 6 to 9 (Tuesday to Friday).

This popular conference was initiated in 1946 as a session for "general practitioners" just out of military service and about to resume private practice. It was suggested these physicians might be somewhat "out of touch" with medicine on the home front. The idea originally was to help them "tune in" on current medical advancements.

The course curriculum is now devised cooperatively by the University of Iowa Continuing Education Committee, the clinical department heads, the Department of Family Practice and the Education Committee of the Iowa Academy of Family Physicians. Richard M. Caplan, M.D., associate dean, continuing medical education, has been director of the FP Refresher Course since 1970.

Most of the approximately 250 registrants each year are Iowa physicians. However, a sprinkling of doctors also attend from surrounding states.

As has been the custom, the 1984 Refresher

Course for the Family Physician is sponsored by the U. of I. College of Medicine (Office of Continuing Medical Education and Department of Family Practice) and the Iowa Academy of Family Physicians.

Attendance provides 27 hours of Category I credit toward the AMA Physicians' Recognition Award — with the same hourly credit awarded from the American Academy of Family Physicians.

Once again the 1984 Refresher Course will give family physicians and physician's assistants an opportunity to learn what is new in medical thinking and brush up on what is old. The emphasis will be on the application of knowledge and skills to family practice. It emerges in a variety of ways — brief lectures, panels, small-group discussions and workshops, question/answer periods, lunch with the experts, printed course syllabuses, self-assessment quizzes, etc.

Registrants at the 1984 course will have the opportunity to become certified in basic cardiopulmonary resuscitation. Also those attending will have the chance to take a complete physical examination. Notice of appointments for this exam will be mailed in advance to interested registrants.

A wide variety of program topics are planned for the 1984 Refresher Course. Included in the potpourri of subjects are:

- Evaluating Febrile and Other Seizures
- Some Effective Programs to Help Patients Stop Smoking
- Better Help for the Head Injured
- Sleep Disturbances and Sleep Clinics
- Be More Suspicious About Possible Melanoma
- How to Identify High-Risk Pregnancy and What to Do About It



- Making School Physicals Worthwhile
- Strike Back at Stroke
- Sudden Death — Cardiac and Otherwise
- Initial Management of the Trauma Patient
- Cerebral Vascular Evaluation
- Endocrine Tests for Depression
- Workup and Help for Tinnitus and Dizziness
- Stable and Unstable Angina
- Low-Back Problems
- Coping with Stress — Physician and Patient
- Diagnostic Approach to Hematuria
- Understanding Arthritis Better
- Clinical Implications of Monoclonal Antibodies and Percutaneous Ultrasound in Urology

A special program will be offered for nurses desiring accredited continuing education. The University of Iowa will award 0.3 continuing education units to nurses for two programs on March 6. These are titled, "The Acquired Immune Deficiency Syndrome," and "Families and Aging: Decisions Toward Care." A 0.6 CE unit is available for a March 8 program called, "Chronic Sorrow: Resources for Health Professionals and Families."

Registrants' spouses are cordially invited to attend all programs.

Full information regarding registration for the 1984 FP Course is available from the Office of Continuing Medical Education, U. of I. College of Medicine, Iowa City, Iowa 52242. Telephone 319/353-5763. The program begins at 8:15 a.m. on Tuesday, March 6, and continues to 3:45 p.m. on Friday, March 9.

## TLAZOLTEOTL ON THE COVER

*The following comments come from an essay on the relationship between art and medicine which appears in the program folder for the 1984 U. of I. Refresher Course for the Family Physician. It is written by Richard M. Caplan, M.D., associate dean, continuing medical education.*

ARTISTS and physicians have always shared many interests, although neither group has thought long about that commonality. Judging by the images portrayed — the "content" of the artwork — one may read, usually quite directly, what interests or even fascinates the artist. The magnificent statuary of ancient Greece discloses adoration of the human body as an object of beauty and grace. That feeling has motivated visual artists throughout Western civilization, although there have been periods when cultural mores greatly modified its expression.

Love of beauty and expression of personal emotional reactions have not been the only motivators. Artists have also wanted to tell stories, provide instruction, glorify heroes, patrons, or causes, and transmit culture — the mythic and current history of the people —

unto future generations. Thus, as well as beautiful bodies at the peak of health and fitness, we are also shown individuals wasted, dying, and dead. Such major themes in human affairs as birth and death, deformity, injury, and the activities of healers recur constantly in the works of visual artists.

The Aztec fertility goddess, Tlazolteotl, shown on the cover grimacing while giving birth to a stunningly mature-looking offspring, illustrates the relationship of theological concerns to the artist's desire to portray life as it was occurring around him.

We tend to flatter ourselves by calling this art "primitive." But no matter how unsophisticated the ideas or the execution of early art may seem, we must grant those artists a "hats off" for superb depictions, highly skilled craftsmanship, and an unquestionable deep feeling for their subject matter. If we pursue our medical work with a similar intensity of effort, consummate skill, and corresponding deep feeling for our patients and our professional roles, then we, too, stand at least a slight chance of likewise enjoying the approbation of history. — RICHARD M. CAPLAN, M.D.

## Things You Should Know

# Historic Announcement By Blue Cross

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---

*The first general rate reduction in the history of Blue Cross of Iowa is noted here. Credit is given by the Blue Cross chief executive to the public and the providers for the reduction in in-patient utilization.*

---

**S**EVENTEEN MONTHS AGO, I stood before a joint subcommittee of the Iowa Legislature studying health care costs and said Iowans had "no one to blame but themselves" for the high cost of health care.

In that somewhat controversial testimony, I invited the people of Iowa, their doctors, and hospital officials to join us in attacking this state's number one health care cost problem — the overuse of inpatient hospital services.

Today, I can say unequivocally that Iowans have "no one to *credit* but themselves" for the tremendous turnaround in Iowa's utilization rate.

### RATE REDUCTION/CREDIT PLAN

This morning (January 19), Blue Cross of Iowa filed with the State Insurance Commissioner the first general rate reduction in its history. In all, we will *reduce* the hospital portion of our rates to about one-third of our near-

ly one million subscribers and *credit* substantial savings to the other two-thirds who receive coverage through large employers or associations. The total amount of the rate reduction and credit plan is \$24 million.

This announcement will impact two distinct subscriber groups — first, those in employer groups with 25 or fewer employees or who pay for their coverage directly; and second, those who have coverage as part of an employer or association group with more than 25 employees or members.

### COMMUNITY-RATED BUSINESS

The small group and direct-pay subscribers will receive an actual *reduction* for the hospital portion of their rates beginning on July 1. Barring unforeseen circumstances, we also intend *not* to adjust rates again for these subscribers before January 1986, a period of 18 months. No rate increase is anticipated at the usual rate adjustment date of January 1, 1985.

Over the 18-month period, the reductions range from a low of \$15 for the low-premium Medicare supplemental contracts to as much as \$201 for the comprehensive family group conversion coverage with Major Medical.

### EXPERIENCE-RATED GROUPS

For large employers and associations, whose rates are based on each group's use of health care services, as much as a 10% *credit* will be applied to the hospital portion of their rates at the time of their annual contract renewal. The actual percentage will depend on the group's particular funding arrangement with us.

While this does not guarantee an actual rate

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Mr. Sibery is president of Blue Cross and Blue Shield of Iowa. This discussion is condensed slightly from remarks made by Mr. Sibery at a press conference in Des Moines on January 19, 1984.



*reduction* for subscribers enrolled through these large groups, it does mean the hospital portion of their rates next year will be as much as 10% less than it would have been without the rate crediting plan.

Today's announcement culminates 3 years of intensive effort to reduce inpatient hospital utilization since the *use* of health care services and the *charges* for those services dictate the rates we charge our subscribers.

Nearly a year ago, we presented figures showing a dramatic decline in inpatient hospital use in the 2 years since we mandated utilization review in our member hospitals. The decline for 1981 and '82 was a combined 11.8%.

During 1983, inpatient use continued to decline by an additional 4.7% for a 3-year reduction of 16%. What this means is that, for every 6 people hospitalized in 1980, *one* is not admitted today. Inpatient use has dropped from 878 hospital days for every 1,000 Blue Cross subscribers under age 65 in 1980 to 738 hospital days per 1,000 subscribers today.

The best example of the impact of utilization reductions on rates is the Iowa Farm Bureau, whose members constitute our largest group of subscribers with an enrollment of about 100,000. Two years ago, IFB rates, based on health care costs and experience, increased by 30%. In 1983, following utilization reductions, their rates increased only 15%.

This year, Farm Bureau rates are expected to go down or increase only slightly as a result of these utilization reductions and the rate crediting plan. The recognition for this success belongs to our subscribers who, along with Iowa hospitals and physicians, have, through private sector cooperation, controlled Iowa's number one health care cost problem.

#### HOSPITAL CHARGES

But the dilemma is not over. Hospital charges in 1983 continued to rise. The utilization reductions merely tempered this trend. Now, the time has come to focus on the *cost* issue while continuing to keep inpatient use to minimum, medically-necessary levels.

Our new hospital prospective payment system is designed to do that. It is a sensible, long-term solution to the cost dilemma which, in concert with Medicare and Medicaid's prospective payment systems, will result in positive changes in the delivery of health care. This will ensure cost stabilization *without* sacrificing the high quality of care in Iowa and with-

out resulting in cost shifting to others.

#### BLUE CROSS ROLE

The role of Blue Cross of Iowa in the battle to control health care costs has been a catalytic one. We merely provided programs such as utilization review and payment for outpatient surgery to set the stage for wide-ranging improvements in the health care delivery system.

The rate reduction and crediting plan announced today benefits us as well as our subscribers, making us even more competitive in the marketplace. Our unique non-profit status, coupled with our social mandate to protect the welfare of the public from catastrophic health care expenses, allows us to reduce rates and credit savings *voluntarily* rather than simply profit from this improvement. And it should boost Iowa's economy at the same time.

Blue Cross and Blue Shield of Iowa's financial health continues to be strong. Our administrative costs as a percentage of the rate income have been reduced markedly over the past year and remain among the best in the industry. We are pleased we can share the success with our subscribers.

#### BLUE SHIELD AND MAJOR MEDICAL RATES

The rate reduction and credit plan is for the Blue Cross — or hospital portion — of the rates only. Barring unforeseen circumstances, we also intend to keep Blue Shield and Major Medical rates the same for small-group and direct-pay subscribers over the 18-month period covered by the rate filing. This comes on the heels of a 25.5% reduction in Major Medical rates which became effective January 1.

Except for subscribers with Medicare supplemental coverage, this rate reduction and credit plan does *not* necessarily affect subscribers in the 26 northwest Iowa counties covered by Blue Cross of Western Iowa and South Dakota. However, direct-pay and small-group subscribers will benefit from our intention not to increase rates for Blue Shield and Major Medical coverage for 18 months.

The only subscribers in the 73-county area covered by the Des Moines Blue Cross Plan who are *not* affected by our announcement are those who have coverage through national employers, companies headquartered in other states, and the Federal Employee Health Benefit Program. This amounts to only 6% of our nearly one million subscribers.





MERCY HOSPITAL MEDICAL CENTER

DES MOINES, IOWA  
PRESENTS

# **"PERSONAL COMPUTERS IN MEDICINE"**

**WEDNESDAY,  
MARCH 14, 1984**

**8:00 A.M. TO 4:00 P.M.**

**GUEST FACULTY:**

**JAMES A. BLACKMAN, M.D.**  
ASSISTANT PROFESSOR OF PEDIATRICS  
DEPARTMENT OF PEDIATRICS  
THE UNIVERSITY OF IOWA  
IOWA CITY, IOWA

**TOPIC: "SIMULATED CLINICAL CASE  
STUDIES USING COMPUTERIZED  
VIDEO DISKS"**

**JONATHAN L. ELION, M.D.**  
ASSISTANT PROFESSOR IN CARDIOLOGY  
DEPARTMENT OF MEDICINE (CARDIOLOGY)  
UNIVERSITY OF KENTUCKY  
MEDICAL CENTER  
LEXINGTON, KENTUCKY

**TOPICS: "DATABASE MANAGEMENT  
SYSTEMS, INFORMATION  
NETWORKS AND  
REMOTE LINKUPS and  
PERSONAL COMPUTERS IN  
MEDICAL EDUCATION"**

**WILLIAM R. FELTS, M.D.**  
PROFESSOR OF MEDICINE  
THE GEORGE WASHINGTON UNIVERSITY  
MEDICAL CENTER  
WASHINGTON, D.C.

**TOPIC: "SELECTING FUNCTIONS FOR  
COMPUTER PERFORMANCE"**

THE SEMINAR WILL BE HELD IN BEH AUDITORIUM SOUTH-1

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contact: Mercy Hospital Medical Center  
Sixth and University  
Des Moines, Iowa 50314  
Ph. # (515) 247-3042

**BARRY GINSBERG, M.D., PH.D.**

ASSOCIATE PROFESSOR OF MEDICINE  
DEPARTMENT OF INTERNAL MEDICINE  
THE UNIVERSITY OF IOWA  
IOWA CITY, IOWA

**TOPICS: "HOME APPLICATIONS OF  
PERSONAL COMPUTERS and  
PATIENT EDUCATION USING  
PERSONAL COMPUTERS"**

**RICHARD E. HORTON, PH.D.**  
ASSOCIATE PROFESSOR OF  
COMPUTER ENGINEERING  
IOWA STATE UNIVERSITY  
AMES, IOWA

**TOPICS: "PERSONAL COMPUTER  
MYTHOLOGIES and PERSONAL  
SELECTION: JUSTIFICATION  
OR RATIONALIZATION?"**

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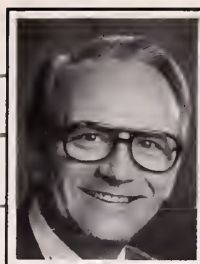
Marion E. Alberts, M.D.

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## COMMENTING EDITORIALLY

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### DEVOTION

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*"It is necessary for hym that is sycke to have two or iii good keepers." The Dyetary of Helth, Chapter XL.*  
— ANDREW BOORDE (1490-1549)

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THE TEMPERATURE outdoors had fallen to new lows. The windchill factor had an increasingly devastating effect on personal comfort. The snow piled higher and higher. Yet, early in the morning and late at night a workforce of devoted persons endured the miserable weather to serve the sick.

The doors of a hospital are never locked. The employees are there day and night. Many are devoted to their duties far beyond the loyalty shown by workers in other occupations. The sick are their responsibility. The sick depend on every hospital employee — the housekeeping personnel, the nurses and nurses' aides, the ancillary personnel (laboratory technolo-

gists, pharmacists, surgical technologists), as well as the physicians. Often when vicious winter weather becomes the villain, the day-shift is stranded and must stay all night, and the next shift is likewise stranded at home. Continuing hours of devoted labor for the welfare of the patients becomes an accepted responsibility.

Too often we are remiss in our thanks to these fine people. They are special individuals for they labor in an atmosphere of love. It is appropriate as a Valentine greeting to express love. So it is with this short message. We love all you hospital employees who devote your lives to helping us practice medicine. The future well-being of the sick and injured depends upon your continuing devotion to their needs.

Happy Valentine's Day to all hospital employees. We love you! — M.E.A.

---

*"The trained nurse has become one of the great blessings of humanity, taking a place beside the physician and the priest, and not inferior to either in her mission."* SIR WILLIAM OSLER (1849-1919).

---

### TIME DOESN'T CHANGE

"WE MUST SET about through ways and means in our own individual sphere to show the public-body our good intentions and increase our usefulness. Our efforts to dictate legislation have failed utterly in the last few years, and our sphere of usefulness should be to increase our facilities to render better service and to prevent adverse

legislation which may retard scientific investigation in the field of medicine and increase the danger of the spread of infectious diseases."

"The really serious danger from the public is that the public may endeavor to secure medical service by legislation in the direction of state medicine, at terms that will be disastrous. We must show a spirit of united effort in our own work and a better organization, not perhaps in our public clinics, but in our society work."\*

These words are from an unsigned editorial

(Please turn to page 65)

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\* Editorial, Some of the problems relating to the practice of medicine. JIMS, 13:287-288, July 1923.

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## A Primer for the Practitioner

# Cervical Spine Involvement In Rheumatoid Arthritis

CHARLES R. CLARK, M.D.

Iowa City, Iowa

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*Prompt recognition of cervical spine involvement is important. The initiation of appropriate treatment may avoid the consequences of spinal instability with resulting neurological deficit. The author stresses evaluation of the neck in patients with rheumatoid arthritis.*

---

**R**HEUMATOID ARTHRITIS frequently involves the cervical spine. More than 85% of patients with moderate to severe rheumatoid arthritis show some radiographic abnormalities.<sup>5, 6</sup> The cervical spine is often overlooked in rheumatoid patients. It is an involvement to be considered because of the possible serious consequences. Progressive instability of the upper cervical spine may lead to upper spinal cord, medullary and vertebral compression with resultant severe neurological deficit or even death.<sup>16, 23</sup> Cranial settling is probably the most serious life-threatening complication.<sup>10</sup>

---

Dr. Clark is an assistant professor in the Department of Orthopaedic Surgery, College of Medicine, University of Iowa, Iowa City, Iowa.

Fifteen to 36% of advanced rheumatoid patients demonstrate atlantoaxial instability,<sup>9</sup> and 5-8% show some degree of cranial settling.<sup>10</sup> There is little correlation between the duration of the disease, the clinical manifestations, or various laboratory tests and involvement of the cervical spine.<sup>23</sup> Involvement, however, is most common in patients with more severe rheumatoid disease.<sup>24</sup>

Three lesions most often produce neural involvement and intractable pain: *atlantoaxial subluxation*, *subaxial subluxation* (second to the seventh cervical vertebrae) and *superior migration of the dens into the foramen magnum*, i.e., cranial settling.<sup>22</sup> The terminology is somewhat confusing, especially with respect to cra-

TABLE I  
CLASSIFICATION OF CERVICAL SPINE INVOLVEMENT IN  
RHEUMATOID ARTHRITIS

- 
- |                                   |
|-----------------------------------|
| I. Atlantaaxial Subluxation       |
| II. Cranial Settling              |
| III. Subaxial Subluxation (C3-C7) |
- 

nial settling. Synonymous terms include: upward migration of the dens,<sup>18</sup> translocation of the dens,<sup>19, 21</sup> vertebral subluxation of the odontoid<sup>25</sup> and basilar<sup>23</sup> or pseudobasilar invagination.<sup>12, 15</sup> The term *cranial settling* most accurately represents the pathology and is used in Table I. Sherk emphasized the im-

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SCIENTIFIC PRESENTATION FOR THE MONTH OF FEBRUARY 1984

TABLE II  
RADIOGRAPHIC CRITERIA OF CERVICAL SPINE INSTABILITY

- I. Atlantoaxial Subluxation Greater Than 3 mm.
- II. Cranial Settling:
  - A. Dens greater than 3 mm. above Chamberlain's line
  - B. Dens greater than 4.5 mm. above McGregor's line
  - C. Dens above Wackenheim's line
- III. Subaxial subluxation greater than 3.5 mm.

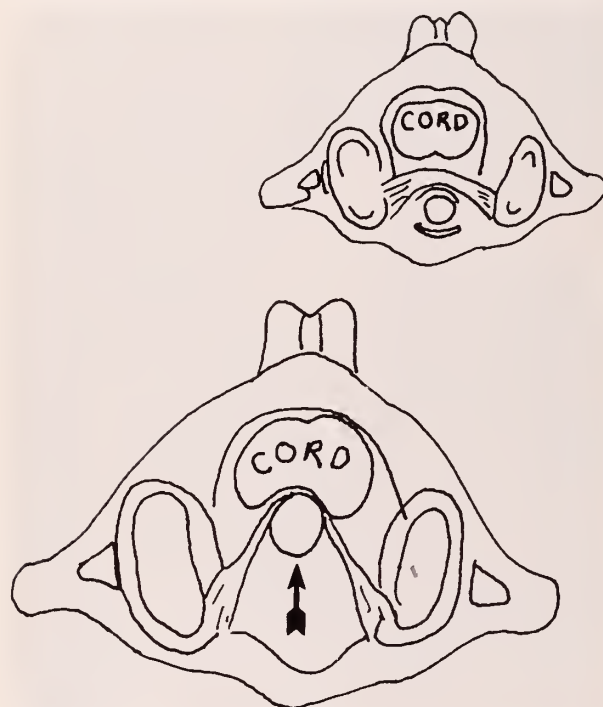


Figure 1. (Above) Schematic diagram of ring of C1 dens. Note that the transverse ligament holds the dens tightly against the anterior position of the ring of C1. (Below) With rheumatoid involvement of the spine the transverse ligament becomes attenuated and the dens subluxates posterior with resultant cord compression.



Figure 2. Lateral tomogram with Metrizamide contrast of cranio-cervical junction demonstrating synovial proliferation just posterior to dens with secondary erosion of dens.

portance of differentiating *cranial settling* from *atlantoaxial instability*.<sup>23</sup> *Atlantoaxial instability* is a relatively benign process with less than 20% of patients showing progressive instability.<sup>16</sup> *Cranial settling*, however, progresses in 33-50% of patients.<sup>17</sup>

This paper delineates cervical spine manifestations of rheumatoid arthritis and stresses the importance of evaluating the neck in patients with advanced disease.

#### PATHOLOGY

The pathology of rheumatoid arthritis in the cervical spine resembles that in peripheral joints. Inflammation of the synovium leads to ligament attenuation and disruption as well as bone and cartilage destruction. The primary joints involved include the atlantooccipital, atlantoaxial, atlantodental and the neurocentral joints or joints of Luschka. These joints are all lined by synovial tissue and are a feature only of the cervical spine. This appears to account for the tendency of rheumatoid inflammation to involve this portion of the spine while dorsal and lumbar portions generally escape.<sup>24</sup>

In atlantoaxial subluxation, osteoporosis, synovial effusion and proliferation of synovial tissue combine to cause destructive changes in the odontoid process, the transverse and alar ligaments, and the lateral masses of the atlas and occipital condyles.<sup>2, 7, 13</sup> Early in the disease, synovitis and effusion in the atlantodental joint permit an abnormally large excursion of the atlas on the axis. Later, progressive erosion of the dens often accompanies attenuation or destruction of the transverse and alar ligaments. Instability of the atlas becomes greater and the effective cervical canal diameter decreases as these changes progress<sup>23</sup> (Figure 1). The width of the cervical canal and the degree of synovial proliferation are among the most important determinants of neural deterioration.<sup>3</sup> Synovial proliferation may be profound even in the presence of minimal subluxation and this alone may account for neurological deficit (Figure 2). Bony destruction of the dens due to proliferating pannus may also lead to significant instability and neurologic compromise.

Significant involvement of the atlantooccipital joint may lead to destruction of the occipital atlantoaxial complex allowing the skull



to settle to a lower level on the cervical spine and the odontoid process to project above the level of the foramen magnum.<sup>14, 16, 21, 23</sup> Neurological problems result from impingement of the medulla oblongata and proximal cord by the dens. The vertebral arteries may also be occluded as they converge to enter the skull between the dens and margins of the foramen magnum.<sup>10</sup> Swinson noted that bone and cartilage destruction as opposed to ligamentous laxity permits the occiput and C1 to settle upon C2<sup>25</sup> (Figure 3).

Involvement of the neurocentral joints by the rheumatoid inflammatory process leads to instability and subluxation in the subaxial region of the cervical spine.

#### CLINICAL PRESENTATION

The neurological status of a patient with severe rheumatoid disease can be difficult to ascertain because of the multifocal involvement. Involvement of the hands, peripheral nerve entrapment, root involvement by foraminal encroachment, and cord or brain stem compression by bony displacement may all lead to weakness and neurological deficit. One must realize that neural deficit may not be due to peripheral involvement and may indeed be secondary to changes in the cervical spine.

(Please turn to page 60)

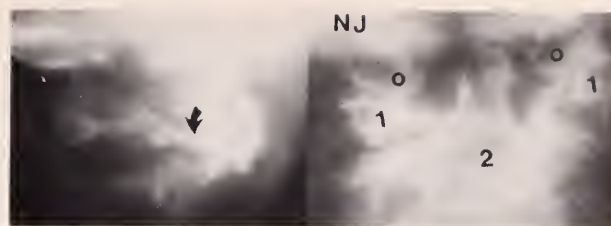


Figure 3. Lateral (left) and anteroposterior (right) tomograms of the crania-cervical junction demonstrating destruction of C1 resulting in cranial settling.

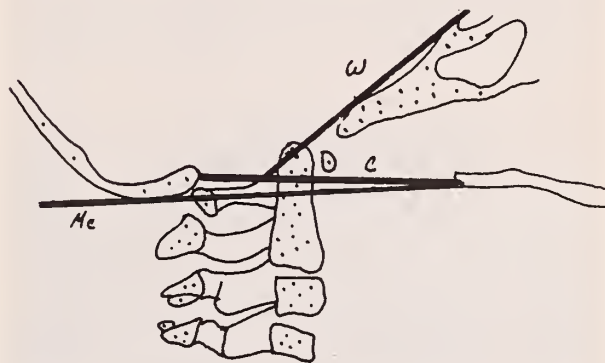


Figure 4. Schematic diagram of the cranio-vertebral junction demonstrating radiographic parameters of cranial settling. (W = Wackenheim's clivus baseline, C = Chamberlain's line, Mc = McGregor's baseline.)

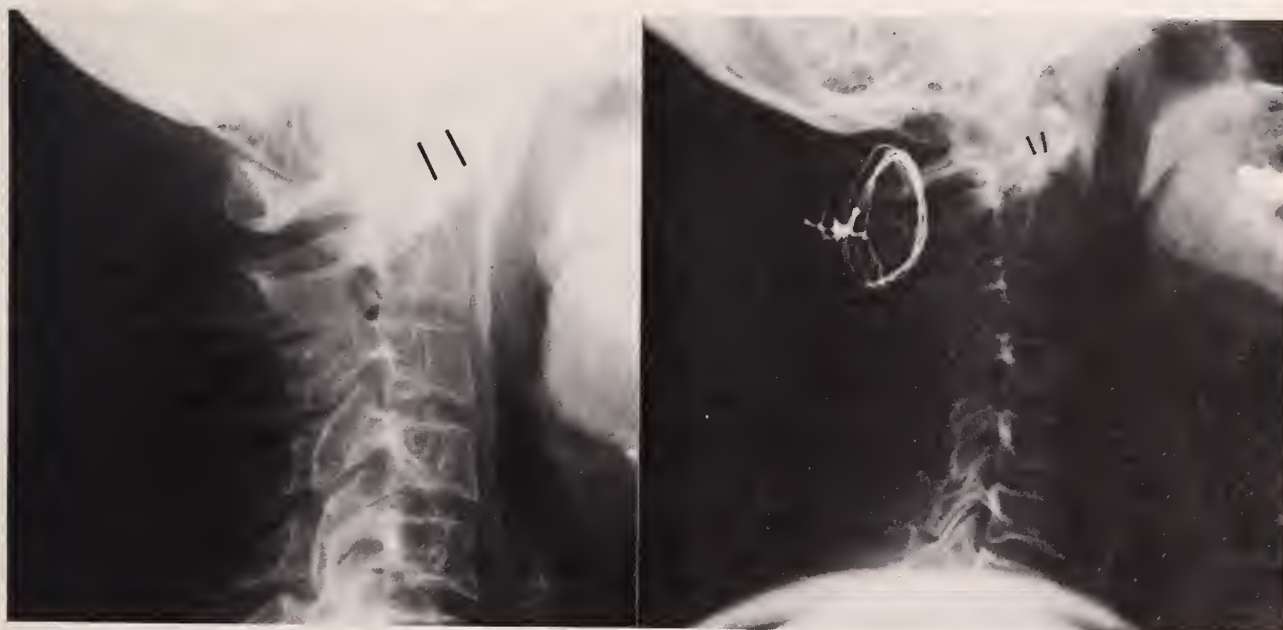


Figure 5. (Left) Preoperative lateral radiograph demonstrating 8 mm. of atlantoaxial subluxation. (Right) Postoperative lateral radiograph demonstrating C1-C2 fusion wires and an acceptable atlantoaxial relationship.



Clinical signs and symptoms range from none to quadriplegia. The earliest symptoms include posterior occipital headache and pain along the course of the greater occipital nerve. Later, patients may complain of hand weakness, difficulty in walking and a sense of impending doom with head flexion.<sup>1</sup> Clinical signs may also be negative or patients may present with confusing symptoms and signs such as weakness in the hands with hyporeflexia of the upper extremities and spasticity with hyperreflexia and positive Babinski signs in the lower extremities.<sup>1</sup>

Certain findings should alarm the physician: an abrupt increase in the severity of neck pain, urinary incontinence, increasing weakness, spasticity of lower extremities, or change in ambulatory status. One must always consider the possibility of cervical spine involvement when one of these changes appears. Vertebral artery thrombosis or stenosis should be suspected when vertigo, nystagmus or dysphonia develop.

#### RADIOGRAPHIC FINDINGS

Initial radiographic examinations for evaluating the neck should include standard anteroposterior and lateral flexion/extension roentgenograms. Cervical polytomography, myelography, and computerized tomography are often required to fully evaluate the extent of cervical spine involvement.

A standard lateral flexion/extension view helps to determine atlantoaxial stability. Anatomical studies have shown that more than 4 mm of atlantoaxial subluxation indicates attenuation or even rupture transverse ligament. Greater than 6 mm of subluxation indicates rupture or attenuation of the alar ligaments and subsequent C1/C2 dissociation. Martel states that greater than 3 mm of subluxation between the dens and anterior atlantal arch on a lateral flexion/extension view is abnormal.<sup>15</sup> Several measurements help define cranial settling. Chamberlain's line is drawn from the posterior edge of the hard palate to the posterior rim of the foramen magnum. The tip of the dens should protrude no more than 3 mm above this line. McGregor's baseline, which is similar, extends from the caudad tip of the occiput to the posterior portion of the hard palate. The tip of the dens is normally less than 4.5 mm above this line. Wackenheim's clivus baseline, drawn along the cranial surface of the

clivus, should normally be tangent to or barely intersect the tip of the odontoid. An abnormality beyond the limits of these indicates cranial settling (Figure 4). Use of Chamberlain's line to determine the extent of cranial settling is preferred by the author.

Subaxial subluxation may also result in instability. White has shown when there is greater than 3.5 mm of subaxial subluxation the cervical spine is unstable<sup>28</sup> (Table 2).

#### TREATMENT

Treatment is based upon the presence of signs and symptoms and not strictly on the basis of radiographic findings. The presence of subluxation on dynamic roentgenograms does not *per se* warrant fusion. There must be symptoms sufficiently significant to warrant the hazards of surgery.<sup>1</sup> Patients with mild atlantoaxial subluxation who complain of intermittent headaches are often treated symptomatically. A hard cervical collar may be prescribed when such patients ride in a car. The key when following patients with early involvement is periodic examination, including a lateral flexion/extension radiograph.

The decision to operate is difficult. Relative indications for surgery include increasingly severe neck pain, severe occipital neuralgia and progressive instability. Most authors agree surgery is indicated when neurological signs develop. Ranawat states because the myelopathy that occurs in these patients may become irreversible, early surgery is indicated even in patients without significant neurologic involvement if they have mobile atlantoaxial subluxation greater than 8 mm or mobile subaxial subluxation greater than 4 mm. Regardless, the presence of neurological signs and symptoms indicate that the upper cervical cord and medulla are at serious risk, and treatment should be prompt.<sup>26, 27</sup>

Several surgical procedures are used at the University of Iowa when surgery is indicated. A posterior fusion of the Brook's type is utilized in patients with significant atlantoaxial instability.<sup>11</sup> We initially manage cranial settling with skeletal traction. If the dens can be reduced and the patient's neurological status improves, these patients can then be treated by posterior occipital-cervical fusion. However, if the dens cannot be reduced or the neurological deficit does not improve, the patient may need a resection of the dens combined with a pos-

terior occipital-cervical fusion. Patients with significant subaxial subluxation are managed with posterior cervical fusions. Bone grafts are used in all of these fusions. Anterior fusions have not been successful in these patients.<sup>5</sup>

Methylmethacrylate has been advocated recently as an adjunct to cervical spine fusions in patients with rheumatoid disease.<sup>4, 22</sup> The use of the methacrylate as an adjunct to the standard fusion may provide several advantages including immediate rigid fixation, avoidance of postoperative orthoses, facilitation of nursing care, and decreased operative time and blood loss. The acrylic enhances the fixation of wire to bone, eliminates motion between wires and bone, thereby decreasing the chance of wire and/or bone failure, and it may also be used to support and stabilize bone grafts. We use adjunctive methylmethacrylate sparingly and only for selected cases.

#### CASE HISTORIES

*Case 1* — N. J., a 45 year old female had a 2 year history of intermittent occipital headaches. She developed severe posterior cervical pain and complained of paresthesias in both hands with neck flexion one month prior to admission. The patient also complained of vertigo and tinnitus with neck motion. Dynamic lateral flexion/extension roentgenograms demonstrated 8mm of subluxation. The patient underwent a Brook's type posterior cervical fusion from C1 to C2 uneventfully. One year postoperative she remains asymptomatic (Figure 5).

*Case 2* — M. L., a 47 year old female had a 5 year history of intermittent posterior cervical pain and occipital headaches. Prior to admission, she had a 3 month history of bilateral upper extremity paresthesias and weakness. During this interval, the patient deteriorated from ambulation with a walker to a wheelchair. Cervical spine roentgenograms revealed atlantoaxial subluxation of 7 mm and cranial settling of 8 mm beyond Chamberlain's line. The patient was placed in skeletal traction. A myelogram of the cranial-cervical junction demonstrated significant compression of the medulla by the dens. Neurological status improved markedly with traction. Following 2 weeks in traction, the patient had only mild weakness of her upper extremities which she felt was her baseline. We, therefore, performed a posterior occipital to cervical fusion



Figure 6. Lateral tomogram of cranio-cervical junction. Dashed line indicates Chamberlain's line and unbroken line indicates Wackenheim's clivus base line. Significant cranial settling is present.



Figure 7. (Left) Lateral radiograph of patient in 1976 following a posterior C1-2 fusion. Note the relative normal appearance of the subaxial cervical spine. (Right) Lateral radiograph of same patient in 1980 demonstrating significant subaxial subluxation.

utilizing bone graft and adjunctive methylmethacrylate. Four months post-operation the patient walks with her walker (Figure 6).

*Case 3* — G. P., a 65 year old female, underwent a posterior C1-C2 fusion for atlantoaxial instability in 1976. In 1980, she developed paresthesias of both hands and was felt to have bilateral carpal tunnel syndromes. On further evaluation, she had weakness in both upper extremities with hyporeflexia as well as spasticity of the lower extremities. The patient was also confined to a wheelchair for 3 months because of weakness in her legs. Lateral flexion/extension radiographs demonstrated significant subaxial subluxation at multiple levels. After 2 weeks in cervical traction the alignment of her cervical vertebral column improved. Her neurological status also improved, and the pa-

(Please turn to page 62)



tient underwent a posterior cervical fusion from C2 to T1 utilizing bone graft and adjunctive methylmethacrylate. After one and a half years of follow-up she walks with a walker and has good strength of all extremities (Figure 7).

#### DISCUSSION

Rheumatoid arthritis commonly involves the cervical spine, and the physician treating such patients must recognize this. In patients with rheumatoid arthritis, the following should alert the physician to the possibility of cervical spine involvement: severe neck pain, bizarre weakness or paresthesias of the hands and upper extremities, change in ambulatory status, spasticity of the lower extremities, or urinary incontinence.

Surgery is indicated in only a small percentage of patients with rheumatoid arthritis. Ranawat has estimated that only 0.7% of patients with rheumatoid arthritis require surgical intervention in the cervical spine.<sup>22</sup> When neurological signs develop because of involve-

ment of the cervical spine, treatment should be prompt because the upper cervical cord and brain stem are at serious risk.

Significant atlantoaxial subluxation may be present in the asymptomatic patient. One must not have a false sense of security when examining or treating such patients. In order to rule out a significant instability, all patients with advanced rheumatoid arthritis who are undergoing anesthesia for a surgical procedure *must have* dynamic lateral flexion/extension x-rays prior to the induction of anesthesia.

The physician must always be cognizant of the possibility of cervical spine involvement in the rheumatoid patient. Prompt recognition of such involvement and the initiation of appropriate treatment may avoid the grave consequences of significant cervical spine instability with resulting neurological deficit and even death.

#### REFERENCES

The references noted in this paper are available either from the author or the JOURNAL OF THE IOWA MEDICAL SOCIETY.

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# Membranous Glomerulonephropathy (MGN) With Pulmonary Arterial Thrombosis: A Case Report

K. W. MIN, M.D.,  
JOSEPH SONG, M.D.,  
C. THOMAS FLYNN, M.D., and  
CRAIG SHADUR, M.D.  
Des Moines, Iowa

---

*This case report of membranous glomerulonephropathy is unusual because the presenting symptoms of arterial thrombosis and infarction obscured the accurate assessment of the disease. MGN is a chronic glomerular disease of unknown etiology.*

---

A HYPERCOAGULABLE STATE is known to exist in membranous glomerulonephropathy. Thrombotic complications have been reported involving renal vein,<sup>1, 2</sup> vena cava and hepatic vein,<sup>3</sup> pulmonary artery,<sup>4, 5</sup> femoral artery<sup>6</sup> and sagittal sinus.<sup>7</sup> Reported here is a case of MGN diagnosed at autopsy on a patient who presented with pulmonary infiltrates caused by repeated episodes of pulmonary artery thrombosis masquerading as Goodpasture's syndrome.

## CASE HISTORY

A 66-year-old white female was transferred (2/1/82) from a regional hospital to Mercy Hos-

pital Medical Center in Des Moines. The initial diagnosis was acute glomerulonephritis with bilateral pulmonary infiltrates. The patient had been in her usual state of health until 1/9/82, when she developed right-sided pleuritic chest pain which lasted 3 or 4 days. Additionally, she had a raw sensation in her mouth as well as pain and discoloration in the left fifth finger and right great toe.

The past history revealed poorly-defined polyarthritides. However, the patient denied any other joint symptoms, fever, chills, cough or hemoptysis. Laboratory data showed creatinine 1.4, BUN 33.6, and urinalysis showed 3+ proteinuria, trace hematuria and 10-20 hyaline casts/hpf. Cold agglutinin titer was negative, as were protein electrophoresis and ANA. Twenty-four hour urine revealed 4.96 gm of protein, and creatinine clearance was 30.2 ml/minute. The patient was thought to have an infectious process in the lung for which antibiotics were given. A lung scan showed low probability of pulmonary embolus. The renal condition worsened progressively and the patient was transferred to this hospital.

The admitting physical examination revealed a few rales on the lung bases and splinter hemorrhage in the nailbeds. Chest X-rays showed irregular infiltrations on bilateral lung fields. Laboratory data disclosed BUN 44, creatinine 28, WBC 23.5 with 85% PMN's and normal platelets; PT and PTT were moderately prolonged, 13.5 and 49.1, respectively. There was slight elevation of fibrin degradation prod-

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The authors are associated with the Departments of Pathology and Internal Medicine at Mercy Hospital Medical Center in Des Moines, Iowa.

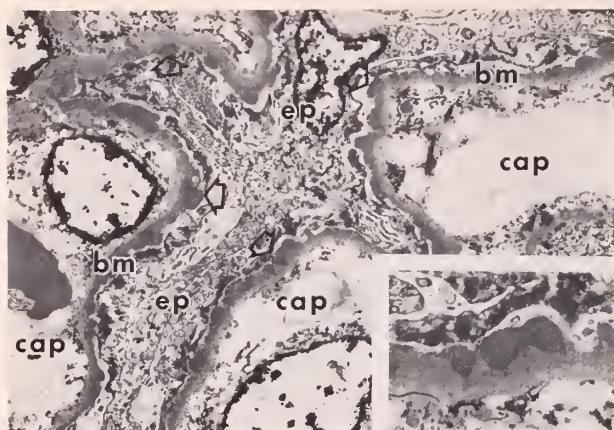


Figure 1. A representative portion of the renal cortical tissue at autopsy was fixed in glutaraldehyde solution for electron microscopy. The glomerular basement membrane (BM) is diffusely thickened, and there were nodular electron dense deposits (arrow) along the epithelial (EP) side. Note capillaries (CAP) are free of exudate. Details of the basement membrane changes are better seen in inset. Electron Micrograph 5000X and X16500 (inset)



Figure 2. Fresh frozen sections of the renal cortical tissue stained for human IgG using FITC-labeled antihuman IgG rabbit serum revealed diffuse but discontinuous fluorescence along the glomerular basement membrane. Staining for C3 was also positive in a similar pattern. Human IgG X150

ucts. On the fourth hospital day, she developed hypotension and became lethargic and disoriented with episodes of nausea and vomiting. Her vital signs worsened gradually. She died in spite of resuscitative measures 6 days after admission.

#### PATHOLOGY

Autopsy was carried out 3 hours after death. There was disseminated thromboembolism of systemic vessels resulting in widespread infarction of visceral organs. Included were intestines, spleen, liver, pancreas, kidneys,

brain, heart and adrenals. In addition, the mitral valve showed pinkish vegetations at the closing edges. There were aggregates of fibrin material without any bacterial colony, consistent with non-bacterial thrombotic endocarditis. The pulmonary arteries showed thrombotic occlusions with varying stages of organization and organizing pulmonary infarcts. The kidneys were of normal size and there was hemorrhagic mottling over the subcapsular cortical surfaces. The renal veins were free of thrombosis. The glomeruli were normal in cellularity without any inflammatory cell infiltration. There was diffuse thickening of the basement membrane, due to discontinuous nodular deposition of electron-dense material along the external border of the membrane as revealed by electron microscopic study (Figure 1). These deposits were positive for human IgG and C3 on immunofluorescent microscopic study (Figure 2), typical of MGN.

#### COMMENT

The renal changes in this case are characteristic of MGN.<sup>8</sup> They include diffuse thickening of the basement membrane, diffuse irregular nodular electron dense deposits in the epithelial side, and diffuse lumpy deposits as seen in the immunofluorescent studies.

MGN is a chronic glomerular disease of unknown etiology frequently associated with idiopathic nephrotic syndrome in adults. Patients with the disease usually present with an insidious onset of nephrotic syndrome; renal failure is relatively a late complication. The patient reported here is unusual in that repeated episodes of pleuritic pain, associated with irregular pulmonary infiltrates, and laboratory data consistent with acute glomerulonephritis, were initial symptoms suggesting a differential diagnosis of Goodpasture's syndrome or Wegener's granulomatosis. However, at autopsy, the pulmonary infiltrates were attributed to infarcts of varying ages of organization and caused apparently by repeated episodes of thrombotic occlusions of pulmonary arteries. It is interesting that the pulmonary changes were a part of disseminated vascular systemic thromboembolic complications as evidenced by nonbacterial thrombotic vegetations of the mitral valve and widespread visceral infarcts.

Non-bacterial thrombotic endocarditis (NBTE) and disseminated arterial and venous thrombosis, as seen in this patient, result from



a hypercoagulability state of the blood.<sup>9, 10</sup> There was indeed evidence of intravascular coagulation. Increased fibrin degradation products, prolongation of PT and PTT, and signs of acral vascular insufficiency were evident. The occurrence of venous thrombosis, particularly involving the leg veins as a complication of nephrotic syndrome, was pointed out by Addis<sup>11</sup> in 1948. Thrombotic complications involving other vessels also have been reported. The frequent association of renal vein thrombosis (RVT) and nephrotic syndrome lead to an erroneous belief that RVT is one of the causes of nephrotic syndrome; however, recent studies demonstrated that a hypercoagulability state exists<sup>12</sup> in nephrotic syndrome, and thrombosis, including RVT, represents a complication,<sup>13</sup> as was the case in this patient.

Although the mechanism leading to a hypercoagulability state in nephrotic syndrome is not clearly understood, a number of explanations have been offered: 1) increased coagulation factors including fibrinogen, Factor V and

VII and platelets;<sup>13</sup> 2) decreased anticlotting factors, such as AT-III and plasminogen through increased glomerular clearance due to diseased basement membrane,<sup>14, 15</sup> and 3) metabolic changes including hyperlipoproteinemia.

In addition, the role of steroid therapy has been advocated to address the effect of thrombotic complication. Steroids appear to contribute to a hypercoagulability state by elevating blood clotting factors, including Factors V, VII and X, and platelets, and its own clot-promoting effect.<sup>16</sup> Nevertheless, the thrombotic complications usually occur in the course of nephrotic syndrome with or without treatment by steroid and diuretics. This case report is quite unusual in that pulmonary arterial thrombosis and infarction were the initial presenting symptoms and disseminated thromboembolic phenomena predominated her fulminant clinical course preventing an accurate assessment of her disease.

#### REFERENCES

The references noted in this paper are available on request either from the authors or the JOURNAL OF THE IOWA MEDICAL SOCIETY.

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## COMMENTING EDITORIALY

*(Continued from page 55)*

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in the IMS JOURNAL of 60 years ago. These words have a familiar ring to them. We are continually concerned as a profession for the general welfare of the public. The health of all is our concern first and foremost. Yet, we are also of a nature to question the manner of the provision of that care. True, some physicians have more avarice about their compensation for providing health care, but in the main our profession has been as diligent as any other profession to our mission.

Often we are criticized because of stands our professional society assumes regarding pending legislative measures. We are accused of near-sighted, self-centered attitudes that may not be in the best interests of the public. These accusations, when fully analyzed, are without substance for the most part. We are expected to minister to our patients; to avoid giving advice and counsel on political and economic affairs of the public. We must assume the role of

medical statesmanship along with our primary commitments to mankind. We must protect the integrity of our profession and in doing so pursue a climate of better overall health care.

History has demonstrated over and over again that measures advocated by the medical profession (or, for that matter, those measures we have resisted) have been for the public good. Many legislative measures have been concerned with preventive medicine (reporting of contagious diseases, pure water supplies, immunization programs, measures to abolish quackery, and control of unjudicious use of drugs). However, there always have been critics who cry out that we are concerned primarily with selfish interests. Balderdash!

So on it goes. Sixty years ago our profession was concerned with the public's good health care. This succeeding generation is similarly concerned, and future generations will not abdicate that responsibility. Physicians must realize this responsibility, press forward to assume it, but at the same time make every effort to avoid traps that will deny us the opportunity to exert our influence in continuing to provide the best medical care available in the entire universe. M.E.A.



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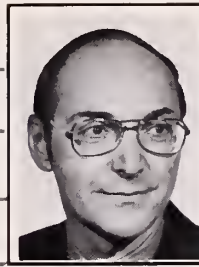
Richard M. Caplan, M.D.

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## OUR MAN IN EDUCATION

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### CRONUS (KRONOS) AND CHRONOS

**W**ORD ORIGINS are fun — to me, anyhow. I had smugly decided that there must surely be a linguistic connection between what we spell Cronus (or Kronos), the name of one of the Titans of Greek mythology, and chronos, from the Greek word for time. I thought there *had* to be a connection because Cronus, born of the union of Heaven (Uranus) and Earth, ate *his* children, and it seemed to me that time (chronos) consumes all of *us*, who are its offspring. (I suspect the similar sound also seduced me, even though I know how distant can be the meaning of homonyms, like “our” and “hour.”)

Cronus was a feisty and tyrannical character: he killed his own father (one legend says castrated) to usurp his position. Then, when his marriage to his sister Rhea began to yield progeny, and fearing one of them might in turn usurp *his* position, he began the cannibalism of his offspring. But Rhea apparently grew distressed at that and by the time child number six came along, she decided to do something about it. She concealed the baby (Zeus) and presented Cronus a stone wrapped in swaddling clothes. He gulped down the package. Zeus thus managed to attain manhood, at which time he forced an emetic on his father, the siblings of Zeus were regurgitated and joined him in battling Cronus and the other Titans, and after a 10 year struggle they won and Cronus was banished.

All of us are the children of time, in a sense, which ultimately consumes all of us. The struggle about that process seems constant. In

one of my recent reveries, when my own battle slackened slightly, I remembered something told me recently by a physician-friend who is suffering a progressive neurological illness that has caused him to discontinue his active practice. When I asked him how he spends that extra time which now he has, he said he uses it to read medical journals because the material is so interesting and exciting. He’s right — much of it *is* interesting and exciting; it’s not simply that this physician lacked other

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***The conversation recalled Thoreau’s advice: “Read the great books first, for there may not be time remaining to read the others.”***

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interests and therefore continued to turn to the medical literature from habit or poverty of imagination. The conversation recalled Thoreau’s advice: “Read the great books first, for there may not be time remaining to read the others.” As a maxim it sounds good, even though disagreement arises over which are the great books or which the great medical journals and articles. But I admire my friend’s appreciation for the intellectual and emotional content of current medical literature and his passion to keep reading it.

I remain uncertain whether, after time has consumed each of us, something akin to Cronus’s ancient Greek emetic (perhaps “reincarnation” in the Eastern religious tradition, or “the hereafter” in ours) will produce a restoration. In the meantime I struggle for some kind of *detente* with time and occasionally wonder about the outcome. And if Cronus and chronos truly are cognates only of sound but not of meaning, as my research now suggests, I will continue to take pleasure at having developed a reasonably persuasive argument for a common etymology.

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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.





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#### References:

1. Stone PH, Turi ZG, Muller JE. Efficacy of nifedipine therapy for refractory angina pectoris. *Am Heart J* 104:672-681, September 1982
2. Antman E, Muller J, Goldberg S, et al. Nifedipine therapy for coronary artery spasm. Experience in 127 patients. *N Engl J Med* 302:1269-1273, June 5, 1980

#### BRIEF SUMMARY

##### PROCARDIA® (nifedipine) CAPSULES

For Oral Use

**INDICATIONS AND USAGE:** I. **Vasospastic Angina:** PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation; 2) angina or coronary artery spasm provoked by ergonovine; or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm, or when angina is refractory to nitrates and/or adequate doses of beta blockers.

II. **Chronic Stable Angina (Classical Effort-Associated Angina):** PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

#### CONTRAINDICATIONS:

Known hypersensitivity reaction to PROCARDIA.  
**WARNINGS:** Excessive Hypotension. Although in most patients the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out. In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery.

**Increased Angina:** Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

**Beta Blocker Withdrawal:** Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

**Congestive Heart Failure:** Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event.

**PRECAUTIONS:** General: Hypotension. Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

**Peripheral edema:** Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

**Drug Interactions:** Beta-adrenergic blocking agents. (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates. PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Digitalis. Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization.

Carcinogenesis. Impairment of fertility. When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

Pregnancy. Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys.

**ADVERSE REACTIONS:** The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients; transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianginal medication. Additionally the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

**Laboratory Tests:** Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGPT and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

**HOW SUPPLIED:** Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container.

More detailed professional information available on request

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in about 10% of patients, transient hypotension in about  
5%, palpitation in about 2% and syncope in about 0.5%).

*Quotes from an unsolicited  
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- 2) Angina where the clinical presentation suggests a possible vasospastic component.
- 3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these patients are incomplete.

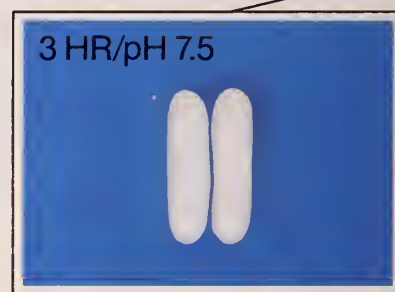
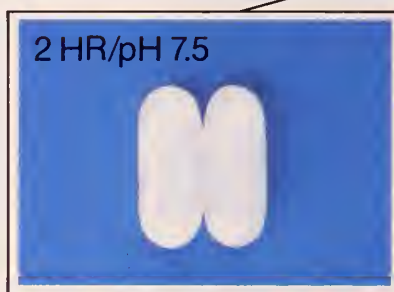
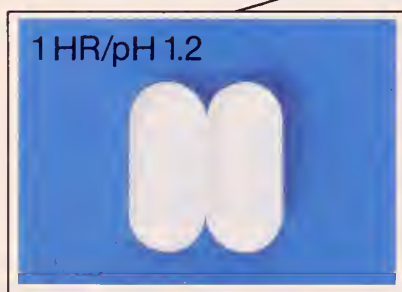
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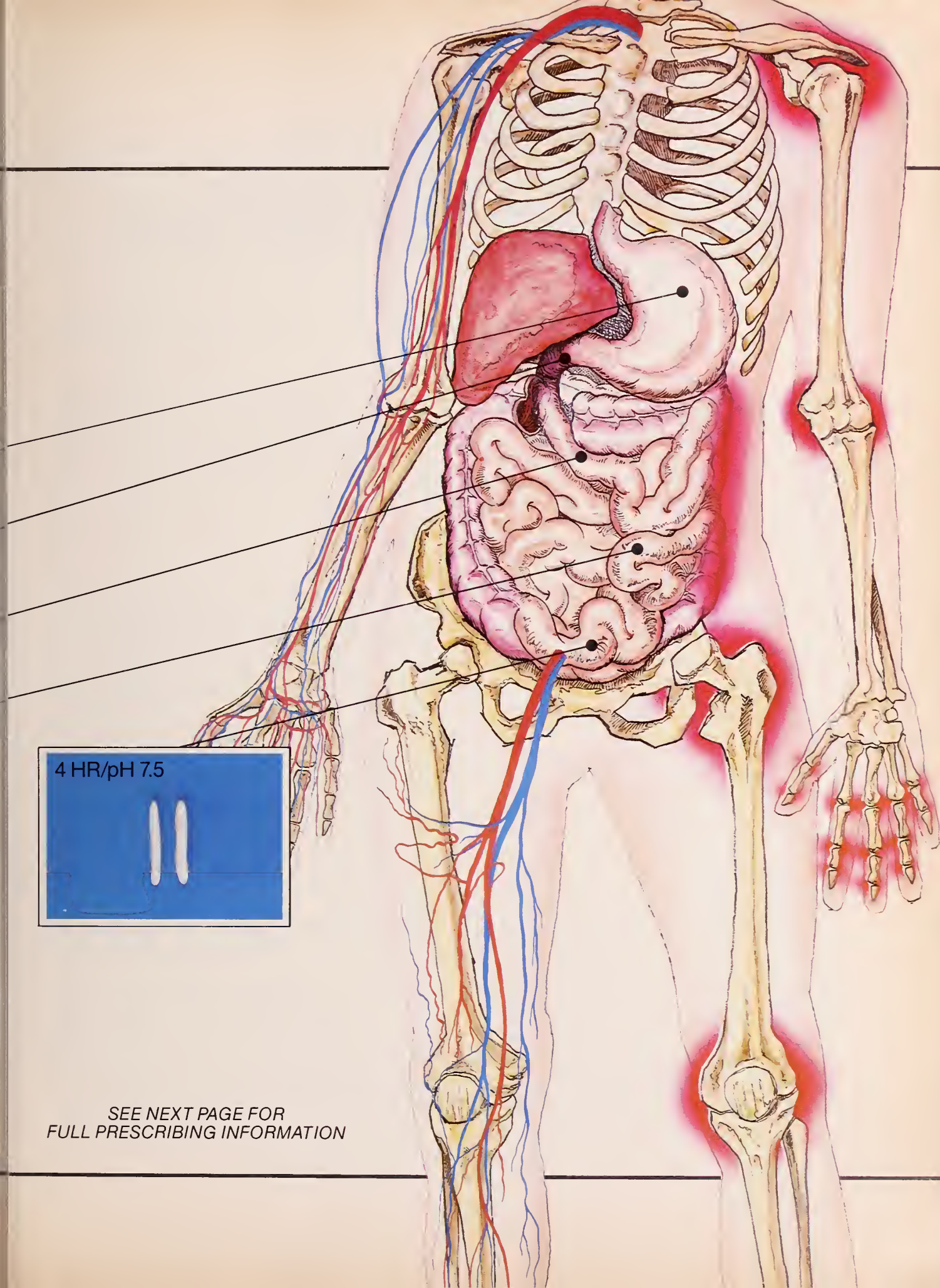
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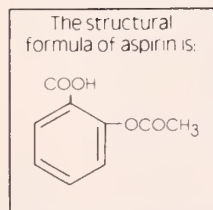


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not been established in those rheumatoid arthritic patients who are designated by the American Rheumatism Association as Functional Class IV (incapacitated, largely or wholly bedridden, or confined to wheelchair, little or no self-care).  $\square$  In patients treated with Zorprin for rheumatoid arthritis and osteoarthritis, the anti-inflammatory action of Zorprin has been shown by reduction in pain, morning stiffness and disease activity as assessed by both the investigators and patients.  $\square$  In clinical studies in patients with rheumatoid arthritis and osteoarthritis, Zorprin has been shown to be comparable to conventional release aspirin in controlling the aforementioned signs and symptoms of disease activity and to be associated with a statistically significant reduction in the milder gastrointestinal side effects (see ADVERSE REACTIONS). Zorprin may be well tolerated in some patients who have had gastrointestinal side effects with conventional release aspirin, but these patients when treated with Zorprin should be carefully followed for signs and symptoms of gastrointestinal bleeding and ulceration.  $\square$  Since there have been no controlled trials to demonstrate whether or not there is any beneficial effect or harmful interaction with the use of Zorprin in conjunction with other nonsteroidal anti-inflammatory agents (NSAIs), the combination cannot be recommended (see Drug Interactions). **Because of its relatively long onset of action, Zorprin is not recommended for antipyresis or for short-term analgesia.** **CONTRAINDICATIONS:** Zorprin should not be used in patients known to be hypersensitive to salicylates or in individuals with the syndrome of nasal polyps, angioedema, bronchospastic reactivity to aspirin, renal or hepatic insufficiency, hypoprothrombinemia or other bleeding disorders. Zorprin is not recommended for children under 12 years of age; it is contraindicated in all children with fever accompanied by dehydration. **WARNINGS:** Zorprin should be used with caution when anticoagulants are prescribed concurrently, since aspirin may depress platelet aggregation and increase bleeding time. Large doses of salicylates may have hypoglycemic action and enhance the effect of the oral hypoglycemics, concomitant use therefore is not recommended. However, if such use is necessary, dosage of the hypoglycemic agent must be reduced. The hypoglycemic action of the salicylates may also necessitate adjustment of the insulin requirements of diabetics.  $\square$  While salicylates in large doses have a uricosuric effect, smaller amounts may reduce water excretion and increase serum uric acid. **USE IN PREGNANCY:** Aspirin can harm the fetus when administered to pregnant women. Aspirin interferes with maternal and infant hemostasis and may lengthen the duration of pregnancy and parturition. Aspirin has produced teratogenic effects and increases the incidence of stillbirths and neonatal deaths in animals.  $\square$  If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus.  $\square$  Aspirin should not be taken during the last 3 months of pregnancy. **PRECAUTIONS:** Appropriate precautions should be taken in prescribing Zorprin for patients who are known to be sensitive to aspirin or salicylates. Particular care should be used when prescribing this medication for patients with erosive gastritis, peptic ulcer, mild diabetes or gout. As with all salicylate drugs, caution should be exercised in prescribing Zorprin for those patients with bleeding tendencies or those on anticoagulants.  $\square$  In order to avoid exacerbation of disease or adrenal insufficiency, patients who have been on prolonged corticosteroid therapy should have their therapy tapered slowly rather than discontinued abruptly when Zorprin is made a part of the treatment program.  $\square$  Patients receiving large doses of aspirin and/or prolonged therapy may develop mild salicylate intoxication (salicylism) that may be reversed by dosage reduction.  $\square$  Salicylates can produce changes in thyroid function tests.  $\square$  Salicylates should be used with caution in patients with severe hepatic damage, preexisting hypoprothrombinemia, Vitamin K deficiency and in those undergoing surgery.  $\square$  Since aspirin release from Zorprin is pH dependent, it may change in those conditions where the gastric pH has been increased as a result of antacids, gastric secretion inhibitors or surgical procedures. **Drug Interactions:** (See **WARNINGS**) Aspirin may interfere with some anticoagulant and antidiabetic drugs. Drugs which lower serum uric acid by increasing uric acid excretion (uricosurics) may be antagonized by the concomitant use of aspirin, particularly in doses less than 2.0 grams/day. Nonsteroidal anti-inflammatory drugs may be competitively displaced from their albumin binding sites by aspirin. This effect may negate the clinical efficacy of both drugs. Also, the gastrointestinal inflammatory potential of nonsteroidal anti-inflammatory drugs may be potentiated by aspirin. The combination of alcohol and aspirin may increase the risk of gastrointestinal bleeding.  $\square$  Aspirin may enhance the activity of methotrexate and increase its toxicity.  $\square$  Sodium excretion produced by spironolactone may be decreased in the presence of salicylates. Concomitant administration of other anti-inflammatory drugs may increase the risk of gastrointestinal ulceration. Urinary alkalinizers decrease aspirin's effectiveness by increasing the rate of salicylate renal excretion. Phenobarbital decreases aspirin's effectiveness by enzyme induction. **Pregnancy Category D.** See **WARNINGS** Section. **Nursing Mothers:** Salicylates have been detected in the breast milk of nursing mothers. Because of the potential for serious adverse reactions from aspirin in nursing infants, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the benefit of the drug to the mother. **ADVERSE REACTIONS: Hematologic:** Aspirin interferes with hemostasis. Patients with a history of blood coagulation defects or receiving anticoagulant drugs or with severe anemia should avoid Zorprin. Aspirin used chronically may cause a persistent iron deficiency anemia. **Gastrointestinal:** Aspirin may potentiate peptic ulcer, and cause stomach distress or heartburn. Aspirin can cause an increase in occult bleeding and in some patients massive gastrointestinal bleeding. However, the greatest release of active drug from Zorprin is designed to occur in the small intestine over a period of time. This has resulted in fewer symptomatic gastrointestinal side effects. **Allergic:** Allergic and anaphylactic reactions have been noted when hypersensitive individuals have taken aspirin. Fatal anaphylactic shock, while not common, has been reported. **Respiratory:** Aspirin intolerance, manifested by exacerbations of bronchospasm and rhinitis, may occur in patients with a history of nasal polyps, asthma, or rhinitis. The mechanism of this intolerance is unknown but may be the result of aspirin-induced shunting of prostaglandin synthesis to the lipoxygenase pathway and the liberation of leukotrienes, e.g. slow-reacting substance of anaphylaxis. **Dermatologic:** Hives, rashes, and angioedema may occur, especially in patients suffering from chronic urticaria. **Central Nervous System:** Taken in overdoses, aspirin provides stimulation which may be manifested by tinnitus. Following initial stimulation, depression of the central nervous system may be noted. **Renal:** Aspirin rarely may aggravate chronic kidney disease. **Hepatic:** High doses of aspirin have been reported to produce reversible hepatic dysfunction. **OVERDOSAGE:** Overdosage, if it occurs, would produce the usual symptoms of salicylism: tinnitus, vertigo, headache, confusion, drowsiness, sweating, hyperventilation, vomiting or diarrhea. Plasma salicylate levels in adults may range from 50 to 80 mg/dl in the mildly intoxicated patient to 110 to 160 mg/dl in the severely intoxicated patient. An arterial blood pH of 7.1 may indicate serious poisoning. The clearance of salicylates in children is much slower than adults and should receive due consideration when aspirin overdoses occur in infants; salicylate half-lives of 30 hours have been reported in infants 4-8 months old. Treatment for mild intoxication should include emptying the stomach with an emetic, or gastric lavage with 5% sodium bicarbonate. Individuals suffering from severe intoxication should, in addition, have forced diuresis by intravenous infusions of sodium bicarbonate and dextrose or sodium lactate. In extreme cases, hemodialysis or peritoneal dialysis may be required.  $\square$  (\*A plasma salicylate level of 160 mg/dl in an adult is usually considered lethal.) **DOSEAGE & ADMINISTRATION:** *in order to achieve a zero-order release, the tablets of Zorprin should be swallowed intact.  $\square$  Breaking the tablets or disrupting the structure will alter the release profile of the drug.*  $\square$  It is recommended that Zorprin be taken with sufficient quantities of fluids (8 oz. or more). **Adult Dosage:** For mild to moderate pain associated with rheumatoid arthritis and osteoarthritis, the recommended initial dose of Zorprin is 1600 mg (2-800 mg tablets) twice a day. Because of Zorprin's prolonged release of aspirin into the bloodstream, Zorprin tablets may be taken as a b.i.d. dose. Further adjustment of the dosage should be determined by the physician, based upon the patient's response and needs. Since it will take 4-6 days to reach steady-state levels of salicylic acid with Zorprin, it is recommended dosages be given for at least one week before further adjustment. In general, patients with rheumatoid arthritis seem to require higher doses of Zorprin than do patients with osteoarthritis. **Zorprin is not recommended for children below the age of 12.** **HOW SUPPLIED:** Zorprin Tablets 800 mg; plain, white capsule-shaped tablets.  $\square$  Bottles of 100 Tablets — NDC 0524-0057-01. **Caution:** Federal law prohibits dispensing without prescription.  $\square$  U.S. Patent No. 4,308,251.  $\square$  **Manufactured and Distributed by:** BOOTS PHARMACEUTICALS, INC., Shreveport, Louisiana 71106 U.S.A.

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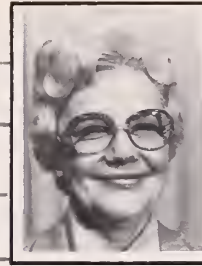


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Mary Early, R.N.

## QUESTIONS AND ANSWERS



### MEDICAL ASSISTANTS

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*Our interviewee has held top local and state offices in the American Association of Medical Assistants. Mary Early lives in Cedar Rapids where she is coordinator of the medical assistant program at Kirkwood Community College. She has several national responsibilities.*

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**As past-president of the Iowa Society, American Association of Medical Assistants, tell us again about your purposes and activities.**

Our local, state and national purposes are essentially the same. We seek to inspire our members to give honest, loyal and effective service to the medical profession and to the public. Through educational activity, we seek to increase our knowledge and professionalism. We strive to cooperate with the profession to maintain and improve our relations with the public. We have a code of ethics and a creed, both of which underscore our desire to merit the respect of the profession and the public.

**Your organizational ties with the AMA and the IMS have been long-standing and highly supportive. Please comment.**

We are pleased at this good relationship. This is attributable in large part to the help furnished by physicians who have served as medical advisors. We are grateful for support from the AMA, IMS and individual physicians. Our members appreciate help given with dues and continuing education costs. We feel fortunate to have received a high level of recognition from organized medicine; we are seeking to live up to this confidence.

**Is the education and training of medical assistants continually improving?**

The last 10 to 15 years have seen much progress in our education and training. All Iowa training programs are accredited, which means they have met the "Essentials" of the American Association of Medical Assistants. Achieving status as a certified medical assistant (CMA) comes either by completing a one- or two-year study program, or by working in a physician's office for at least one year — followed in either case by successful completion of an examination. We are also proud of our continuing education efforts at the state and national levels. We solicit the encouragement of Iowa physicians in our pursuit of education.

**Has the work of the medical assistant in the physician's office expanded?**

Yes. We believe the competent medical assistant is a versatile individual. Working under the physician's supervision, she can perform a variety of important tasks which range from patient support to business management.

**What comments would you offer a physician who employs a medical assistant — in terms of obtaining good work performance?**

Hire one who has graduated from an accredited program. Help your assistant become certified. Paying the examination fee is an incentive you might consider. Allow some opportunities for continuing education. And think about paying your medical assistant's dues.

Thanks for the opportunity to submit these comments. We'll be happy to supply any specific information about our organizations if you wish to direct your inquiry through IMS headquarters.

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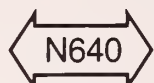


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Finally, because we cover more than 1,000,000 Iowans, we have a particular interest in maintaining quality health care at an affordable cost.

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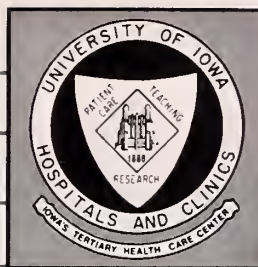


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## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### REGIONAL CHEMOTHERAPY: APPLICATION IN HEPATIC METASTASES

**C**YTOTOXIC CHEMOTHERAPY is being more widely used in the treatment of solid tumors. Most commonly, it is employed when and where surgery or radiation therapy fails to eradicate the disease or assure a cure. Though chemotherapy is not curative in most instances, its temporary palliative effect can be a dramatic, with many patients achieving significant responses and, in some cases, prolongation of survival.

One of the factors limiting the success of chemotherapy is its toxicity to normal tissues. Doses of drugs that are compatible with survival of the host are mandatory. Since it is reasonable to assume that the delivery of higher concentrations of the chemotherapeutic agents directly to the tumor may produce better response rates, techniques for regional infusion (and perfusion) were introduced to provide higher drug concentrations, without increasing systemic toxicity.<sup>1-6</sup> One such example utilizes protracted intraarterial infusions of chemotherapeutic agents through indwelling hepatic artery catheters.

#### BACKGROUND

The liver is one of the most frequent organ sites of metastatic disease. Forty to 50% of all major cancers ultimately metastasize to the liv-

er with cancers of gastrointestinal origins being the most frequent malignancies to do so. Patient survival after the development of liver metastases is limited, with little or no hope for cure. (Apparent cures are observed occasionally after resections of solitary or multiple metastases.) However, the median survival of patients with liver metastases does not exceed 3 to 12 months, depending on the site of the primary tumor.

Survival following documentation of liver metastases from colon and rectal carcinomas is 6 to 12 months, and these tumors represent the most common cancer metastasizing to the liver. It is estimated that 50% of all deaths from colon and rectal malignancies (54,000 deaths per year) will die of or with liver metastases. Hence, effective treatment may have an impact on the prolongation of life of a substantial number of patients. Response to systemic therapy with the most commonly used chemotherapeutic agents is less than 20% and the overall survival time of these patients is seldom increased.

In 1959, Sullivan and Watkins<sup>6</sup> popularized the techniques of intraarterial infusions of chemotherapeutic agents for the treatment of malignant disease localized to certain regions, including the liver. Objective response rates of more than 60% have been reported in their studies. Prolongation of survival with infusion chemotherapy has also been reported by these and other authors.<sup>1, 2, 5, 6</sup> However, most of these studies were not prospective or randomized. A prospective randomized study was carried out by the Central Oncology Group and the results were published by Grage *et al* in 1979.<sup>3</sup> In this study there was no significant advantage in response rate or dura-

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

tion of survival among those patients receiving intraarterial hepatic chemotherapy compared with those receiving systemic 5-FU. The study, however, is susceptible to criticism, since intraarterial infusion was carried out only for the initial 21 days of treatment. The number of evaluable patients (61) is also relatively small. Thus the statistical proof that such treatment may yield benefit or not awaits further study.

#### CHEMOTHERAPEUTIC AGENTS

5-Fluorouracil (5-FU) is the most commonly used and most active agent in the treatment of metastatic colon and rectal carcinomas. It is a cell-cycle specific drug of the family of the fluorinated pyrimidines where a hydrogen atom has been replaced by a fluorine atom at carbon-5 of the uracil molecule.

The dosage of 5-FU varies depending on the route and schedule of administration. When given intraarterially, larger doses can be used than when given by intermittent intravenous injection. Such intraarterial infusion provides significantly higher concentrations of drug in and around the tumor cells, while systemic toxicity is reduced or avoided. This advantage is particularly observed with hepatic artery infusions since the hepatic extraction of 5-FU is from 0.22 to 0.45 and its clearance is from 0.24 to 0.45 L/min, even with doses more than 10 times those conventionally used.

FUDR (5-Fluorodeoxyuridine, Floxuridine) acts by interfering with the synthesis of deoxyribonucleic acid (DNA) and, to a lesser extent, by inhibiting the formation of RNA. Its use was initially limited to intraarterial infusion. When given intravenously (IV push), the dose of FUDR is 30 mg/kg/day. When given by continuous 24-hour intravenous infusion, doses of one thirtieth and one sixtieth of the usual single daily dose can be given, with comparable therapeutic and toxic effects. Currently, FUDR is used almost exclusively for intraarterial hepatic infusion, in dosages between 0.2 and 0.3 mg/kg/day.

Other chemotherapeutic agents have been used for intraarterial therapy; mitomycin C and methotrexate for gastrointestinal cancer, DTIC for melanoma, Adriamycin for leiomyosarcoma, breast cancer, and hepatoma. Reports of the therapeutic effectiveness of these agents are too scarce to warrant detailed consideration at this time.

#### TOXICITY AND SIDE EFFECTS

The systemic toxicity of chemotherapy is the major limiting factor for prolonged therapy or dose escalations. The toxicity of 5-FU and FUDR is similar and occurs almost with the same frequency. When given intraarterially, a major proportion of the drug is metabolized in the liver, allowing only a small proportion to escape into the systemic circulation. The major toxicity is hepatic (chemical hepatitis), producing abdominal discomfort or pain, nausea, anorexia, and jaundice. Subclinical manifestations include elevation of liver enzymes.

Systemic toxicities associated with 5-FU and FUDR are mainly hematopoietic (leukopenia, thrombocytopenia) and gastrointestinal (nausea, vomiting, anorexia, diarrhea, and stomatitis). Alopecia and dermatitis may occur, the latter seen more frequently with FUDR. Other side effects have been reported infrequently.

#### TECHNICAL ASPECTS

There are many methods being used for the administration of chemotherapy by the hepatic artery route. They differ in the technique of introducing the catheter into the hepatic artery, the type of pump used for the infusion, and whether the artery is ligated or not, proximal to the catheter.

##### **Short Infusion via Temporary Percutaneously Placed Catheters**

This method is of relatively short duration. The catheter is advanced via the brachial or femoral artery and guided so that the tip is in the common hepatic artery past the gastroduodenal branch. Disadvantages of this method include the short duration of initial intraarterial infusion (2-3 weeks average), impracticality of repeated catheterization, the need for hospitalization, and gastrointestinal toxicity if the tip of the catheter is dislodged, resulting in infusing the gastroduodenal or right gastric arteries.

##### **Repeated Infusion via Surgically Placed Catheters and External Pumps**

This method of cannulation of the hepatic artery requires a celiotomy at which time the catheter is introduced, positioned, and secured in place. An additional advantage of this technique is that the hepatic artery can be li-

*(Please turn to page 74)*





# Immanuel Medical Center



Announcing . . .

## Oncology Fellowship Program

**April 12-13, 1984**

A two-day continuing education program in Oncology for primary care physicians will be held at Holling Education Center, Immanuel Medical Center, April 12-13, 1984. This program is designed to enhance physicians' diagnosis, treatment and follow-up skills in dealing with the most prevalent oncology diagnoses. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of Dinner Theater together on Thursday, April 12. Participants are housed at the beautiful new Immanuel Plaza Motel on the Medical Center campus.

### First Day

Introduction to Cancer  
John B. Davis, M.D.  
Principles and Treatment of Cancer:  
Radiation Oncology  
Chemotherapy  
David J. Harter, M.D.  
Herbert A. Hartman, Jr., M.D.  
Imaging Modalities  
Paul Bender, M.D.\*  
W. Benton Copple, M.D.\*  
Primary Oncologic Emergencies  
Steven T. Bailey, M.D.  
Colon Cancer Update  
Mark Christensen, M.D.  
Skin Tumor, Diagnosis and Treatment  
John F. Latenser, M.D.  
Lung Cancer Update  
Leonard Moss, M.D.  
David A. Hughes, M.D.  
The Role of the Family Physician in  
the Treatment of Cancer  
Ronald C. Bell, M.D.  
Tour of Radiation Oncology

### Second Day

Tumor Conference  
John B. Davis, M.D., Moderator  
Panel — Medical Staff representing Hematology, Medical  
Oncology, Pathology, Gynecology, Surgery, Radiology, Urol-  
ogy, General Family Practice, Internal Medicine  
Gynecologic Tumor  
Leon S. McGoogan, M.D.\*  
Terrence J. Kolbeck, M.D.\*  
Chronic Lymphatic Leukemia  
John R. Feagler, M.D.  
Multiple Myeloma  
John R. Feagler, M.D.  
Control of Pain in the Cancer Patient  
David J. Harter, M.D.  
Tumor Markers  
Thomas A. Ruma, M.D.  
Breast Cancer Update  
John B. Davis, M.D.  
Cancer Screening in the Physician's Office  
William A. Shiffermiller, M.D.  
Prostatic Carcinoma  
Stewart E. Sloan, M.D.\*  
Gerald C. Felt, M.D.\*  
Liver Pumps and Hickman Catheters  
Thomas Connors, M.D.  
Follow-Up of Cancer Patients  
John B. Davis, M.D.

\* Session presenter rotates for each Fellowship Program.

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402) 572-2340.

gated, a procedure that is thought to contribute to superior results. (It is worth noting that the major blood supply to hepatic metastases is derived from the hepatic artery and that ligation of that artery will produce tumor necrosis; better survival was noted in patients who developed hepatic artery thrombosis during percutaneous infusion therapy.) The cannula is brought out through the abdominal wall. The catheter will be connected to an infusion pump when therapy is begun. Between courses of therapy, the catheter is filled with heparin and capped. Multiple courses of intraarterial infusions are possible by this technique.

### Protracted Infusions via Permanent Catheters and Implantable Pumps

The technique is essentially similar to the one described above except for the fact that the catheter is attached to a pump that is implanted in the subcutaneous tissue on the abdominal wall. The pump has a 50-ml reservoir that needs to be refilled every 2 to 3 weeks. A side port allows "bolus" injections through the catheter. FUDR is the only drug approved by the FDA for use with this system. However,

other drugs may be used under specific experimental protocols.

### NEED FOR CONTROLLED STUDIES

It is obvious that objective evaluation of the value of regional chemotherapy is both essential and timely. The cost and morbidity (physical and mental) to the patient is substantial. The operation, pump and other costs may total more than \$10,000. Results of a well-controlled, randomized study would help the practicing physician in making a decision with his/her patient. If objective benefits are observed with a certain method, risks may be reasonable to take to achieve that benefit; if no benefit is demonstrated, simpler and safer methods should be pursued.

### CURRENT APPROACH AT THE UNIVERSITY OF IOWA

We are currently implementing a prospective, randomized trial to study the possible advantages of protracted hepatic artery infusions. Patients who are candidates will be randomized to one of two study arms. In the first group, systemic chemotherapy with 5-FU will be used. In the second, intraarterial infusion, after operative catheter placement and hepatic artery ligation, will be utilized. The drug will be infused through an external or implantable pump following surgical placement of the intraarterial line. Only by conducting such a prospective, randomized trial can the benefits of such a technique be assessed. — *Adel S. Al-Jurf, M.D., Associate Professor of Surgery; Peter R. Jochimsen, M.D., Associate Professor of Surgery, and Luis F. Urdaneta, M.D., Associate Professor of Surgery*

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#### WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum  $K^+$  levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict  $K^+$  intake. Associated widened QRS complex or arrhythmia requires prompt additional therapy. Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

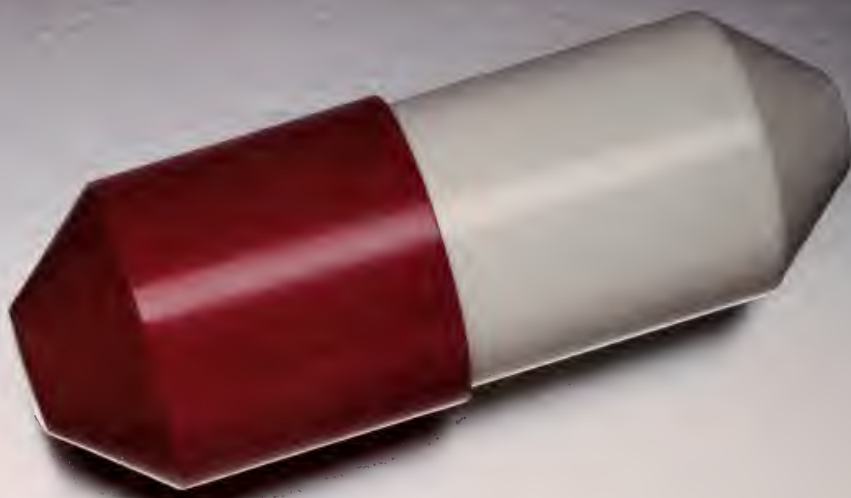
**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth, anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

**Supplied:** 'Dyazide' is supplied in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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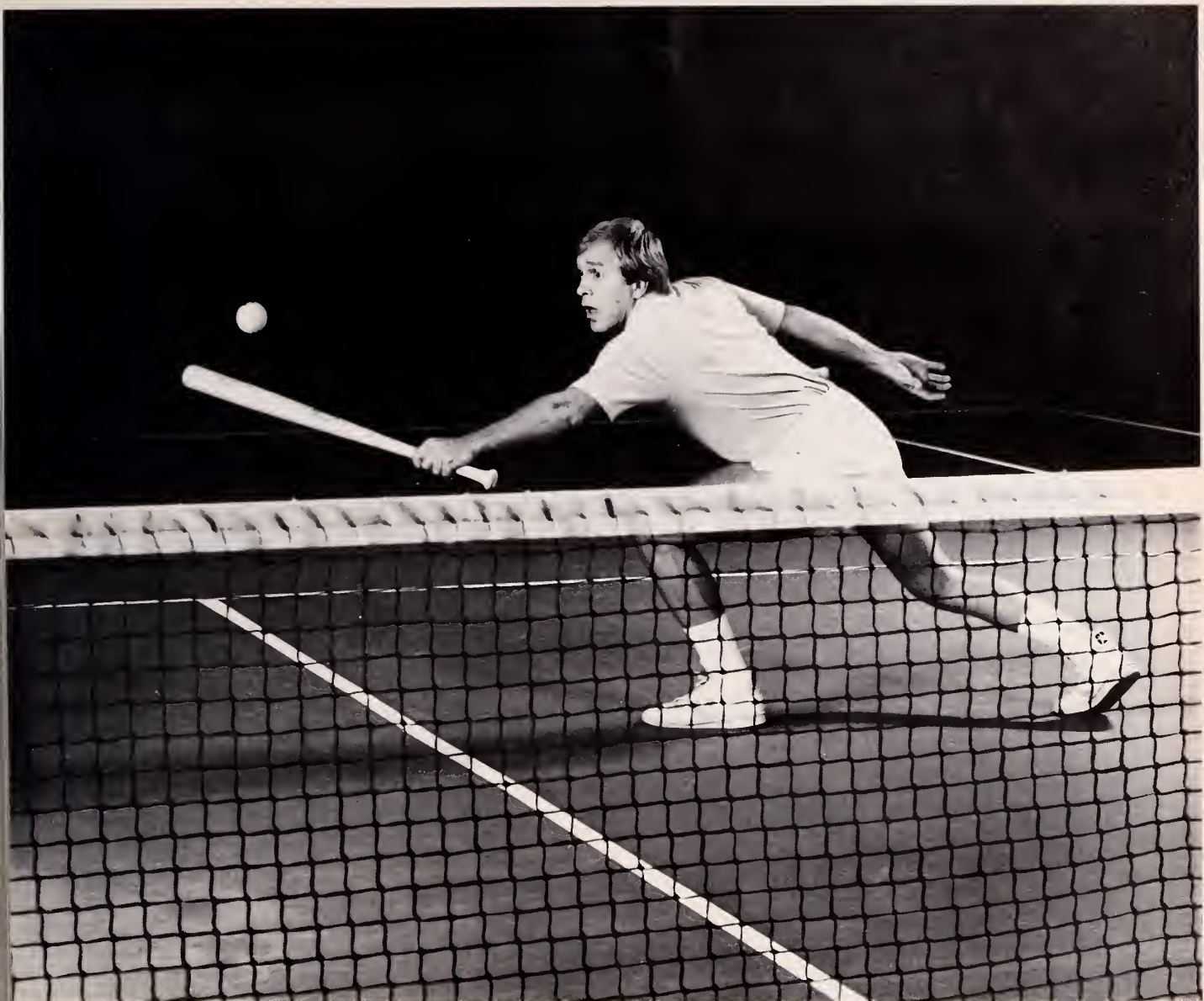
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Information of Interest

## STATE DEPT. OF PUBLIC HEALTH



### DIET INDUSTRY FLOURISHES WITHOUT REGULATION

*This discussion has been prepared by Gina Ries, M.S., R.D., who is Nutrition Director for the Iowa State Department of Health.*

IOWANS ARE BECOMING like Californians where self responsibility for health is concerned. Spas, health food stores and quick-stop medical clinics flourish everywhere. Jogging, aerobics and weightlifting are rituals of the "new-fit" generation, whose members regard exercise as a panacea ensuring optimum wellness. Likewise, the popularity of vitamins, "lite" foods and weight loss diets is a sign of the new and currently insatiable taste for health and nutrition advice in this state and elsewhere. But fortunately and finally, many attempting dietary self-improvement have begun to ask, which is the good nutrition advice? What should I believe? The questions are good ones, as the dangers of misinformation can be frequent and great.

Eating for health, our new national priority, has created a vast demand for nutrition "advisors" and products. And as economic theory would predict, a very profitable and vast diet industry has sprung up almost overnight to meet the demand. The result is rampant misinformation, expense, and risk for the consumer, as federal and state regulations lag far behind

this rapid market expansion. Without statutory provisions to regulate such operations and protect public interests, consumers are on their own to make decisions about the safety of their dietary choices.

#### HOW MANY IOWANS "DIET?"

In a recent statewide survey conducted by the Iowa State Department of Health, Iowans were asked their perceptions of diet as it relates to health.<sup>1</sup> The results indicate 27% of Iowans are currently on a diet to either lose or maintain weight. Nearly one third of Iowans (29%) consider themselves overweight. As expected, the percentage of overweight persons increases with age of the population, with 48% of persons aged 55-64 classifying themselves as overweight. The Iowa health survey also indicates a surge in the practice of "preventive" living, particularly through participation in active exercise. Nearly half (49%) of the respondents reported they exercise between 1 and 6 times per week.

These Iowa statistics compare well with "The American Family Report" findings of Yankelovich, Skelly and White.<sup>2</sup> That survey showed that:

(1) 25% of Americans believe they are eating more nutritiously than in the past.

(2) Six of the 10 perceived major health hazards cited by families are nutrition related: crash diets, overweight, diet pills, cholesterol, fasting and fats.

(3) 23% of the population regard salt as a serious health threat. Clearly, public interest in nutrition is here, but to whom is the public turning for advice?

#### DOCTOR AND NUTRITIONIST OR THE HEALTH FOOD STORE?

The public relies on various sources for its health and nutrition advice. Yankelovich *et al* found that while 45% of Americans still regard their physician as a main source of health in-

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

formation, 45% also look to television or newspaper advertising, and about 20% rely on popular health and diet books as major sources of information.

The public's need to seek advice outside the offices of traditional health care providers is evidenced by the explosion of health food stores and diet centers.

Although successful and heavily relied upon, such enterprises now function virtually free of regulation. The abundance of what is actually medical advice is given without restriction by nonmedical personnel who lack appropriate training. Examples of rampant misinformation from these sources is just now beginning to be documented.<sup>3-5</sup>

#### NO LAWS MEAN NO CONTROL

In Iowa, there is no law which speaks specifically to the diet industry.<sup>6</sup> The State Department of Agriculture is responsible for inspecting health food stores; from its perspective, they are treated just like a grocery store.<sup>7</sup> No

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***"It is a well known fact that in marketing particular diet products, it is legal to lie about nutrition issues, provided one does not do it on the product label."***

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inspection is ever conducted other than perhaps annual review of sanitation concerns. Only on the basis of blatant fraud and abuse, through allegations submitted in writing, can the Attorney General pursue a particular issue related to the claim made by a diet enterprise. To date most such Iowa consumer complaints relate only to financial and not nutritonal concerns which arise following contact with diet businesses.<sup>6</sup>

A survey of the 49 other states revealed very few state statutes specific to regulation of diet businesses or products. Most states license such a business as any other food establishment.<sup>8</sup> Inspections, like those in Iowa, focus only on sanitation issues. Only 7 states reported having specific food and drug statutes. Those states were: Colorado, Louisiana, Montana, New Hampshire, North Dakota, Virginia and Wisconsin. Of those, only North Dakota, Virginia and Wisconsin have restrictions on the sale of specific "dietary" products. In general, states reported no special licensing

requirement, no specialized inspecting, no restrictions on the sale of products or the dispensing of information, and no ongoing investigations into operating diet businesses.

It is a well known fact that in marketing particular diet products, it is legal to lie about nutrition issues, provided one does not do it on the product label. The Food and Drug Administration reports that it controls nothing more than the validity of information directly on the label.<sup>9</sup> Thus, one can make claims so long as the written word, in the form of books, magazines, and pamphlets, is separate from the product on the shelf. The best advice for consumers wanting to minimize the chance of false information gleaned from would-be salesmen comes from Victor Herbert.<sup>10</sup> He says, "Have the seller write down the particular claim, sign his name to it and affix it to the bottle of product he wants to sell you. If the literature is sold with the product, it is labeling and the seller could go to jail for fraud if the claim is false." Good advice?

Actual diets and supplements are no better controlled than diet businesses. Recently a 3-page color advertisement on the Cambridge Diet appeared, apparently unrestricted, in *Time* magazine. The "Cambridge," a dangerously low calorie diet with tremendous current popular appeal, has been the subject of numerous public warnings issued by the FDA and numerous state health departments. Like the protein sparing fasts of the late 70's, the Cambridge diet achieves its results only while placing the user at risk of heart failure due to electrolyte disturbance and myocardial atrophy. Discussions with the FDA reveal it currently lacks legal control over this and other new diets.<sup>9</sup> Thus, the pyramid diet scheme flourishes fully unattended legally, while placing its user in the dangerous position of relying on medically unqualified salespersons for their weight loss supervision.

Cambridge Plan International of Monterey, California is owned by Jack and Eileen Feather, promoters of the once popular Mark Eden breast developer. The Mark Eden program was debunked by the U.S. Postal Service and a U.S. Attorney's office in 1982 in a \$1 million dollar out-of-court settlement based on charges including mail fraud and false advertising. The Feathers previously marketed the "Astro Trimmer" exercise belt and "Slim Skins," the exer-

*(Please turn to page 80)*



# An added complication... in the treatment of bacterial bronchitis\*

Increasing incidence  
of ampicillin resistance in  
*Haemophilus influenzae*

Ampicillin Resistant  
*Haemophilus influenzae*

*H. influenzae*

*S. pneumoniae*

## Brief Summary. Consult the package literature for prescribing information.

**Indications and Usage.** Cefaclor\* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefaclor.

**Contraindication.** Cefaclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings.** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS. AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefaclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions: General Precautions.**—If an allergic reaction to Cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antioglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefaclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefaclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clintest\* tablets but not with Tes-Tape\* (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy—Pregnancy Category B.**—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefaclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers.**—Small amounts of Cefaclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefaclor.<sup>1-6</sup>

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefaclor.<sup>7</sup>

# Cefaclor®

## cefaclor

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Cefaclor\* (cefaclor, Lilly) is administered to a nursing woman.

**Usage in Children.**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions.** Adverse effects considered related to therapy with Cefaclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis [arthralgia and, frequently, fever]) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefaclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome. Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain.**—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic.**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic.**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal.**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefaclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630.

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cise knickers which relied on the household vacuum cleaner to help with the work of weight reduction.<sup>11</sup> Apparently diet powder schemes are easier to legitimize than bust developers.

#### WHAT CAN BE DONE?

By understanding a few basic points, physicians can assist in protecting their patients from diet fraud. Remember:

1. Nutrition is a science. For a thorough understanding, so as to be able to give advice, one cannot have other than a strong academic background in nutrition, dietetics, or a closely related field, like medicine or biochemistry.

2. Practically all trained nutritionists and dietitians are active members of one or more of the organizations and societies dedicated to the study of nutrition and dissemination of sound nutrition information. Among these are: the American Dietetic Association (ADA), the Society for Nutrition Education (SNE), the American Society of Clinical Nutrition and the American Institute of Nutrition (AIN). For some reason, less reliable societies frequently have the word "applied" in their names. While

membership in the above organizations does not guarantee reliability, members are subject to peer review and accountability.

3. While the term "nutritionist" can be and is used by anyone wanting to call him/herself that, the term "Registered Dietitian" can be used only by those individuals who meet certain criteria. A Registered Dietitian (R.D.) has completed a prescribed course of study at an accredited college, an internship under qualified professionals, and has passed a registration examination.

4. An ethical nutritionist does not promise cures or guarantee results. He or she also will *not* recommend an expensive array of vitamin, mineral or protein supplements, or a few specific superfoods with special health-giving properties. A true nutrition specialist can, however, be of great assistance to individuals or a public interested in best maintaining health through reliance on prudent selection of whole, nutritious foods. Moderation and sensibility in food selection are the lessons yet to be learned by a society anxious for slenderness and health. With this, nutrition science can help.

Health conscious consumers have their work cut out. Never before has there been so much information and misinformation. Until the real nutrition experts learn to market their expertise, the consumer learns to seek a sound source of advice, and the laws can catch up with the industry, quacks may continue to fill the gap.

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## December 1983 Morbidity Report

Disease	Dec. 1983 Total	1983 to Date	1982 to Date	Most Dec. Cases Reported From These Counties
Amebiasis	3	39	69	Boone, Plymouth, Washington
Brucellosis	1	5	5	Tomo
Chickenpox	376	6200	6483	Scattered
Compylobacter	34	366	322	Scattered
Cytomegalovirus	5	16	40	Scattered
Eaton's Agent infection	0	112	267	
Encephalitis, virol	1	58	45	Scott
Erythema infectiosum	0	27	247	
Gastroenteritis (GIV)	1529	12948	11144	Scattered
Giordiosis	29	335	166	Scattered
Hepatitis, A	3	31	76	Des Moines, Louiso, Polk
Hepatitis, B	9	90	81	Scattered
Hepatitis, Non A-B	2	40	17	Cloyton, Dubuque
Hepatitis type unspecified	1	13	28	Johnson
Herpes Simplex	102	1020	455	Scattered
Herpes Zoster	0	6	12	
Histoplasmosis	0	16	15	
Infectious mononucleosis	29	213	179	Scattered
Influenza, lob confirmed	0	207	74	
Influenza-like illness (URI)	4211	40990	37701	Scattered
Legionellosis	1	7	23	Bremer
Malaria	0	4	8	
Meningitis oseptic	3	143	94	Des Moines, Johnson, Scott
bocterial meningococcol	11	152	155	Scattered
Mumps	4	49	51	Chickosow
Pertussis	3	9	9	Block Howk, Des Moines, Linn, Webster
Robies in animols	9	201	365	Polk
Reye Syndrome	0	2	5	Scattered
Rheumatic Fever	0	2	3	
Rubello (Germon measles)	0	0	0	
Meosles	0	0	0	
Solmonellosis	19	338	304	Scattered
Shigellosis	3	67	67	Crowford, Linn, Scott
Tetonus	1	1	4	Foyette
Toxic Shock Syndrome	3	17	16	Block Howk, Cherokee, Dollos
Tuberculosis total ill	6	65	69	Scattered
bact. pos.	4	46	51	Clayton, Polk, Webster
Typhoid Fever	0	0	1	
Venereol diseases:				
Gonorrheo	440	4620	4339	
Syphilis	1	23	31	Pottowottomie

Other Non-Reportable Diseases: Trichuris Trichiuro — 1, Johnson; Ureoplasma Urosolylicum — 2, Polk, 5, Johnson; Chlamydia — 2, Johnson; Ascoris — 1, Johnson.

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News About Colleagues

## ABOUT IOWA PHYSICIANS



**Dr. Chule Auh** recently was named medical director of Chemical Dependency Unit and **Dr. Joseph H. Washburn, Jr.**, was named medical director of the Cancer Institute at the Marian Health Center in Sioux City. Dr. Auh formerly was director of psychiatric training at Cherokee Mental Health Institute and Dr. Washburn has been director of radiation oncology at MHC since locating in Sioux City in 1979. . . . **Dr. James Roeder**, Clinton, recently received a certificate of postgraduate fellowship from the American Academy of Facial Plastic and Reconstructive Surgery. . . . **Dr. Eric Paulson** recently joined the Family Health Clinic in Carroll. Dr. Paulson received the M.D. degree at

the U. of I. and completed his internal medicine residency at Iowa Methodist Medical Center in Des Moines. . . . **Dr. Sherry Bulten**, Humboldt, recently was named a fellow of the American Academy of Family Physicians.

**Dr. Donovan F. Ward**, retired Dubuque physician and past president of the American Medical Association, recently was elected secretary-treasurer of the 1,700 member Fifty-Year-Club of American Medicine. . . . **Dr. D. G. Flory**, Indianola, recently was appointed county medical examiner by the Warren County Board of Supervisors. . . . New medical staff officers at Crawford County Memorial

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Hospital are — **Dr. J. L. Flood**, president; **Dr. D. W. Crabb**, vice president; and **Dr. M. U. Broers**, secretary-treasurer. These physicians will also serve as 1984 officers of the Crawford County Medical Society.

**Dr. John Strong** recently opened an obstetrics and gynecology practice in Cedar Falls. Dr. Strong has been chief of obstetrics and gynecology at Offutt Air Force Base Hospital in Omaha, Nebraska. . . . **Dr. Alan D. Ball** recently joined Winterset Medical Associates. Dr. Ball received the M.D. degree at the U. of I. College of Medicine and interned in Ogden, Utah. He is a former member of emergency room staff at Charter Community Hospital in Des Moines. . . . **Dr. Francis McCabe**, Carroll, is a recent recipient of the Silver Anniversary Citation presented by the Creighton University School of Medicine for providing 25 years of service to mankind. . . . **Dr. Stephen R. Zumbrun**, Sioux City, recently was elected to fellowship in the American College of Cardiology. Dr. Zumbrun received the M.D. degree at the Indiana University School of Medicine and

served his residency at the University of Oregon. . . . **Dr. William P. Davey**, Sioux City, recently was named senior member of the executive council of the Iowa Chapter of the American College of Surgeons. Dr. Davey is a past president of the organization. . . . **Dr. Scott K. Nau**, Cedar Rapids, recently was elected to fellowship in the American Academy of Pediatrics. Dr. Nau received the M.D. degree and served his pediatric residency at the U. of I. College of Medicine.

## DEATHS

**Dr. William Province**, 69, Dubuque, died November 29 at Finley Hospital. Dr. Province received the M.D. degree at the University of Louisville Medical School in Louisville, Kentucky. He was a past president of the Dubuque County Medical Society and Iowa Heart Association and a charter member of the American Academy of Family Practice.

*(Continued on page 86)*

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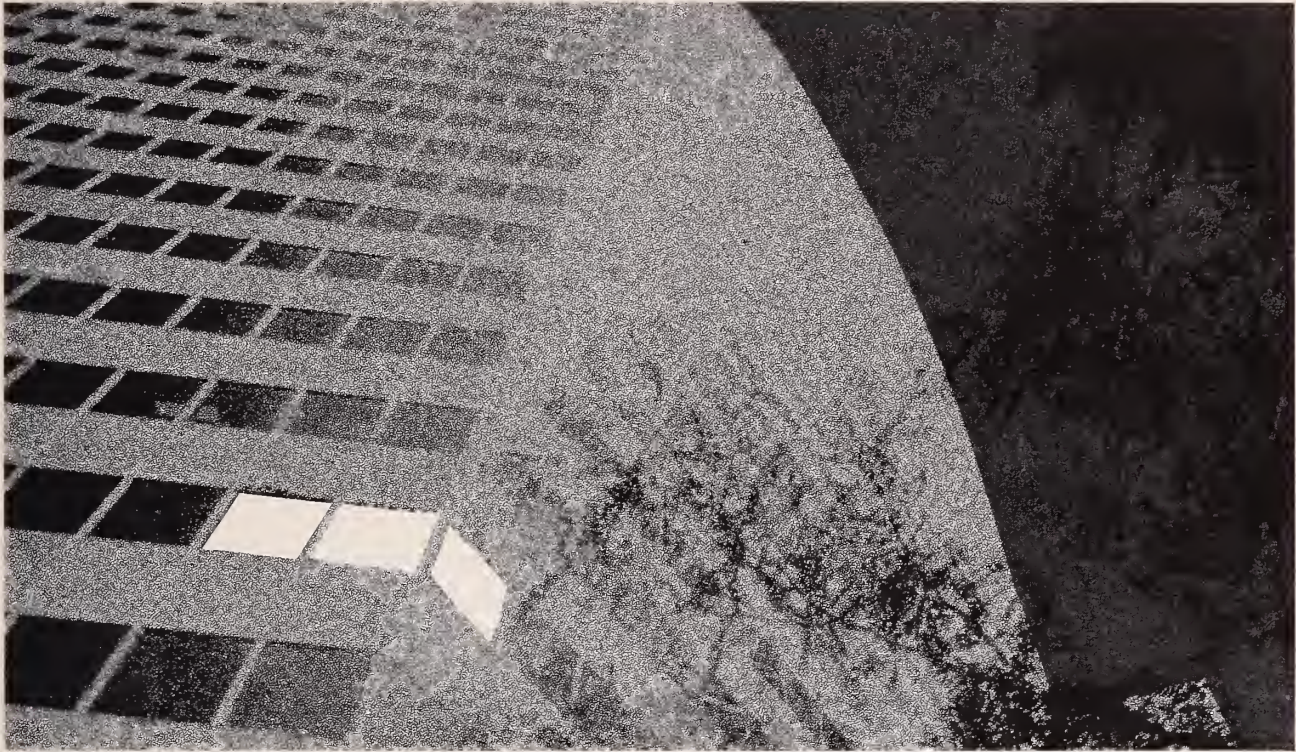
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**Dr. H. Kirby Shiffler**, 70, longtime Des Moines obstetrician and gynecologist, died December 2 at his home. Dr. Shiffler received the M.D. degree and completed his residency at the U. of I. College of Medicine. In 1970, Dr. Shiffler was appointed honorary consular agent of the French government for the Des Moines area.

**Dr. Ralph E. Hines**, 73, Des Moines, died December 18 at his home. Dr. Hines received the M.D. degree at the University of Kansas Medical School at Kansas City. He was a World War II veteran; retired chief of staff at Mercy Hospital Medical Center; past president of the Polk County Medical Society and Medical Forum Club. He was a registered parliamentarian and had taught parliamentary law adult education classes in the Des Moines Public Schools.

**Dr. William D. Maixner**, 68, Ottumwa, died December 22. Dr. Maixner received the M.D. degree at the University of Nebraska School of Medicine. He located in Ottumwa in 1949.

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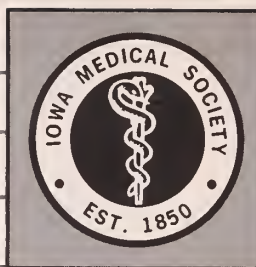
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A Monthly Commentary

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# IN THE PUBLIC INTEREST

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## Interpreting Surveys

**T**HOSE OF US who reply to surveys from time to time find occasional questions open to interpretation. In other words, we are not always sure about the precise meaning of the answer options.

This might have been the case, at least in part, with a recently publicized statewide survey of the Health Policy Corporation of Iowa. One of the survey questions read:

*Many groups in Iowa are working to reduce health care costs. Which one group do you believe should have primary responsibility for controlling hospital and health care costs?*

The answers given by 1,008 Iowans in telephone interviews were in percentage: the public — 34%; state government — 17%; hospitals — 12%; insurance companies — 8%; federal government — 6%; doctors — 6%; employers — 3%; labor unions — 2%; all of the above — 2%; don't know — 10%.

That those surveyed chose themselves (the public) at a percentage level double the next closest answer option is interesting and curious. What added responsibility do you think these folks see themselves needing to assume to control health care costs?

Maybe those questioned think that with more information and more choices they (the public) can select their particular health care delivery format more wisely and more economically. Certainly the rapidly diversifying health care scene (HMO, IPA, PPO, etc.) has the potential to either enlighten or confuse the Iowa consumers of these services.

Or maybe they were saying the public should accept greater responsibility for main-

taining good health in the personal or family sense. This has to do with adequate exercise, proper rest, good nutrition, tobacco abstinence, limited alcohol consumption, etc. This indeed would be meritorious — and, to be sure, it is receiving increasing public attention.

Another of the HPCI survey questions produced the finding that 7 of 10 adult Iowans would be willing to pay the first \$500 of their annual medical costs if doing that would lower their insurance premium by \$600 a year, or if they received an equivalent \$600 in other benefits or take-home pay.

One reaction to this might be: *Who wouldn't?* That's a solid 20% return on the investment.

Of course, the main logic in having the individual assume responsibility for either some initial or overall part of his health care bill is that it tends to make him a more prudent buyer. He is apt, for example, to get his care in an outpatient setting where quality or outcome are not at risk. Such decisions can hold costs in check.

Bearing out other surveys, a high percentage of those Iowans participating in the HPCI study, conducted by IMR/Opinion Research of Des Moines, believe hospital and medical services are priced too high. This finding is predictable. It assumes the probability that few or none of the interviewees were acutely ill or seriously injured at the time of their response. When illness or injury reaches a point of severity concern over cost quickly takes a secondary position to the intensity of medical care.

*This is a "fact of life." And this is as it should be!!*

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February 1984

Iowa Medicine

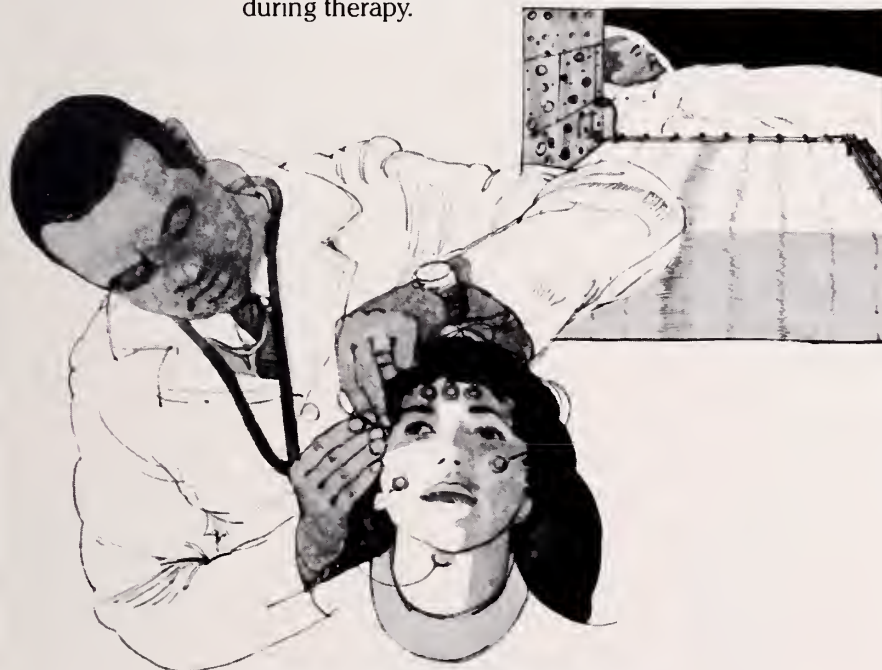


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**References:** 1. Kales A et al: *J Clin Pharmacol* 17:207-213, Apr 1977 and data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Kales A: Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 3. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 4. Kales A et al: *JAMA* 241:1692-1695, Apr 20, 1979. 5. Kales A, Scharf MB, Kales JD: *Science* 201:1039-1041, Sep 15, 1978. 6. Kales A et al: *Clin Pharmacol Ther* 19:576-583, May 1976. 7. Kales A, Kales JD: *Pharmacol Physicians* 4:1-6, Sep 1970. 8. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 9. Dement WC et al: *Behav Med* 5:25-31, Oct 1978. 10. Vogel GW: Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 11. Karacan I, Williams RL, Smith JR: The

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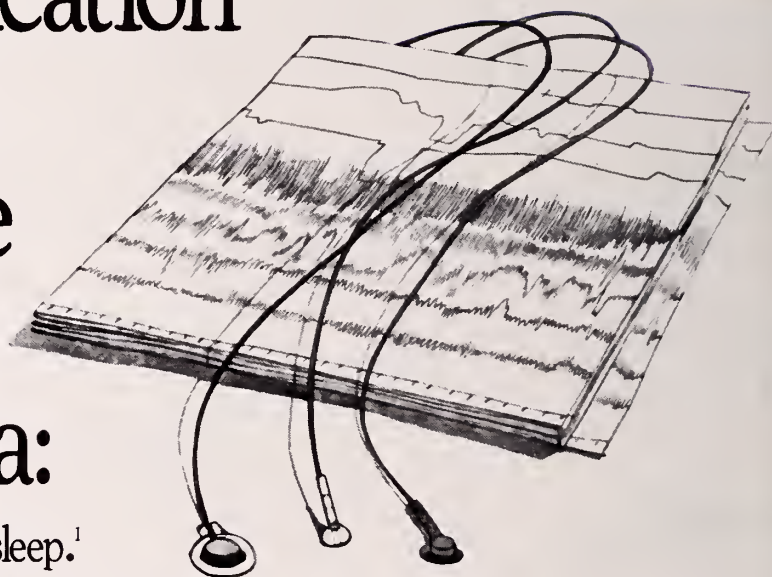
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March 1984

# IowaMedicine

Journal of the Iowa Medical Society

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**N I N E T E E N**

**1984**

**APRIL 2, 3, 4 — IOWA CITY, IOWA — PROGRAM INSIDE**

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# Iowa Medicine

March 1984

Volume 74 Number 3

Journal of the Iowa Medical Society

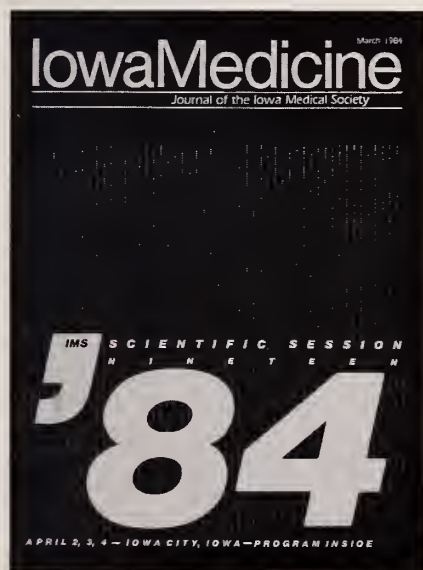
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## ABOUT THE COVER



**ABOUT THE COVER** — This month's cover calls attention to the 1984 IMS Scientific Session which comes up on April 2, 3 and 4 in Iowa City. The CME-accredited program is diversified in subject content and is open to all member physicians. The full 1984 program is described in the 8-page insert contained with this issue.

IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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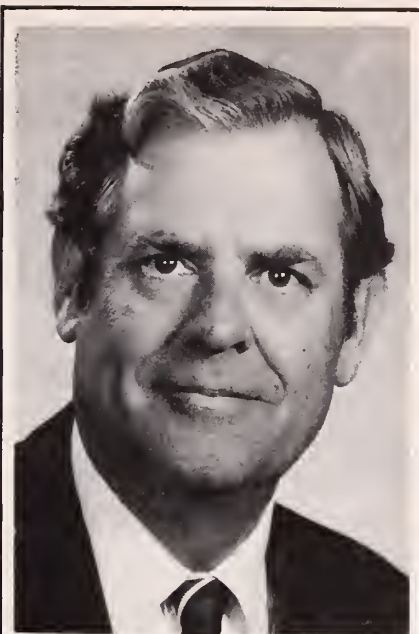
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## PRESIDENT'S PRIVILEGE



**M**EDICAL MALPRACTICE developments have been of major importance to all of us the past month or so. Policy renewal decisions have had to be made in February by those 1,250 Society members covered under the IMS/Aetna Liability Insurance Program. The dilemma has been over acceptance of a 32% premium increase.

As a Society, we objected strongly to the Aetna rate hike. We reinforced our case by offering the evaluations of an independent actuarial consultant. Regrettably, the Iowa Insurance Department chose to accept the 1984 Aetna rate filing.

This means many Iowa physicians are paying substantially more in 1984 for their professional liability coverage. Under the Aetna program, the premium range, depending on specialty classification, runs from \$2,038 to \$28,928. It is plain to see that practice costs for a physician are substantial — and they will have a further impact on the cost of health care.

We have been advised recently that the state's other principal provider of medical liability insurance has submitted a 25% rate increase to the Iowa Insurance Department. This is anticipated to be in effect April 1.

No white flag of surrender is being waved in face of these exorbitant rates. We are looking at

other configurations. The 16 physicians on the IMS Medico-Legal Committee have taken up the challenge; they are examining alternatives with considerable interest; they heard several proposals on February 15. We are looking for an approach through which Iowa physicians can take even greater control of their destiny when it comes to liability protection.

Fairness is the basic goal in all remedial considerations. It needs to be uppermost in the minds of physicians, lawyers, insurance officials and the public when we address the complexities of professional liability.

Erling Larson, M.D.  
President

P.S. Please accept my invitation to the IMS Scientific Session in Iowa City April 2, 3 and 4. The program appears in this issue.



MERCY HOSPITAL MEDICAL CENTER  
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PRESENTS

# **“UPDATE ON GASTROINTESTINAL DISEASE”**

**WEDNESDAY, APRIL 18, 1984**

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CLINICAL INSTRUCTOR COLORECTAL  
SURGERY  
WASHINGTON UNIVERSITY  
IN ST. LOUIS

**TOPICS: “DIVERTICULITIS”**

**AND**

**“SURGICAL ASPECTS OF  
CROHN’S DISEASE”**

**PHILLIP KIBORT, M.D.**

PEDIATRIC GASTROENTEROLOGIST  
CLINICAL INSTRUCTOR OF MEDICINE  
DIGESTIVE DISEASE ASSOCIATES  
MINNEAPOLIS, MINNESOTA

**TOPICS: “DIARRHEA IN CHILDREN”**

**AND**

**“CHRONIC ABDOMINAL PAIN  
IN CHILDREN”**

**ROBERT MACKIE, M.D.**

ASST. CLINICAL PROFESSOR  
OF MEDICINE  
UNIVERSITY OF MINNESOTA  
DIGESTIVE DISEASE ASSOCIATES  
MINNEAPOLIS, MINNESOTA

**TOPICS: “ENDOSCOPIC THERAPY OF  
UPPER G.I. BLEEDING”**

**AND**

**“E.R.C.P. AND SPHINCTEROTOMY”**

**ROY ORLANDO, M.D.**

ASSOC. PROFESSOR OF MEDICINE  
UNIVERSITY OF N. CAROLINA  
CHAPEL HILL, NORTH CAROLINA

**TOPICS: “CHANGING FACE OF PEPTIC  
ULCER DISEASE”**

**AND**

**“REFLUX ESOPHAGITIS”**

**SPEAKER TO BE ANNOUNCED**

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Janet B. Wilcox, M.D.

## QUESTIONS AND ANSWERS



### '84 SCIENTIFIC SESSION

*Dr. Wilcox is chairman of the 1984 IMS Program Committee. Her comments here about the April 2-4 Scientific Session take the form of an invitation to all member physicians.*

#### **Please comment on the 1984 IMS Scientific Session.**

The IMS Scientific Session attempts to present a wide variety of topics, some of which may be off the beaten path, but all of which we hope will pique our members' interest and curiosity.

#### **There are CME meetings all over the country and world. What commends the IMS meeting to Iowa physicians?**

We have presentations of special concern to Iowa (as represented by the session on Respiratory Hazards in Agriculture), as well as the less regional subjects of AIDS and Anorexia Nervosa and Bulimia. Of course, the special program on the epic Voyager Satellite is one of which Iowans may be especially proud.

#### **Does the program have something for everyone?**

This program has broad appeal. It will be readily comprehended by all levels of medical practitioners. We hope specialists with esoteric practices may also benefit by the diverse subjects.

#### **What are the educational benefits of a meeting such as this?**

The "What's New?" sessions will present recent developments in various specialties.

This has been a popular and useful feature. There has been allotted a longer period for these spots, and a Question/Answer time is scheduled. Of current interest are topics concerning Informed Consent, D.R.G.'s and Computer Use in Medical Practice.

#### **Do you have any special words of invitation from the Program Committee?**

The 1984 Program Committee truly enjoyed organizing this session. The greatest problem was paring down the options to fit the time available. Certain areas were not touched on because of recent conferences, e.g., sports medicine. We chose not to duplicate. We hope everyone will find the program valuable and enlightening and worth the time and effort to attend.

#### **Again, what are the dates, place, etc., for the meeting?**

Please mark your calendar and arrange to come to Iowa City on April 2, 3 and 4. Meetings are on April 2 — afternoon — Highlander Inn; April 3 — morning and afternoon — University Hospitals, and April 4 — morning — Highlander Inn.

P.S. It is suggested that departmental visits at University Hospitals may be arranged for by individual physicians on the morning of April 2 or the afternoon of April 4.

#### **Is there anything particularly unique about the 1984 Scientific Program?**

Yes. A unique feature this year will be case reports from various physicians in the Iowa family practice residency programs. Residents have been asked to submit their most interesting case of the year and what was learned from it. The four best cases, as determined by the Program Committee, will be presented during the Case Conferences portion of the program.

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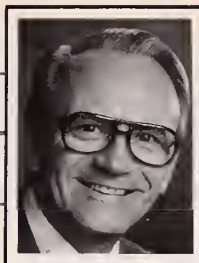


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Marion E. Alberts, M.D.

## COMMENTING EDITORIALY



### ANNUAL SCIENTIFIC SESSION

**Y**OU TOO, I AM SURE, are nearly saturated (or, is "fed-up" a better term) with the political rhetoric bombarding us each day. Promises are made that could never be fulfilled by one person. Who can we believe? Over-inflated egos are trying to imply abilities far beyond the capabilities of the proponents. The sad fact is these great pronouncements will intensify to a crescendo that will defy reality. Yet, there is a way to hear some talking that will have substance in fact, and promises that may be fulfilled.

### GIMMICKS AND GADGETS

**I**NTELLIGENCE is the capacity to acquire and apply knowledge; it is the faculty to think and reason. We have seen medical knowledge grow so rapidly in a quarter century that physicians must rely on computers in some form to supply the significant information that is emerging.

This "mechanized support" is mind-boggling in the potential it holds to help us deal with the information explosion. Computer-aided, diagnostic systems have reached a point of common and practical application. For example, electrocardiographic interpretation by tele-computer is now commonplace. Much of the technology we now have is a byproduct of our space technology. Therefore, we and our patients can take heart that the billions of dollars spent on space technology has reaped benefit for all.

However, we must guard against our profession becoming so involved with machines

The 1984 Annual Scientific Session of the Iowa Medical Society will be in Iowa City April 2-4. This issue of *IOWA MEDICINE* contains the very good program. There will be case presentations, reviews of new concepts in the various specialties of our profession, lectures on topics of general interest, and concerns about the business of medicine. Also, there will be social events. One highlight will be the banquet talk on the Voyager Satellite.

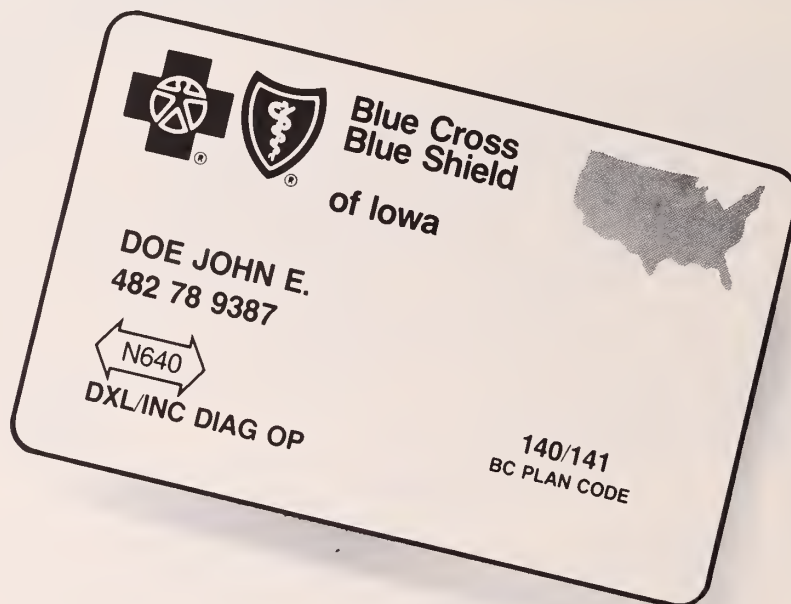
We can assume by the first week in April the rigors of winter will have abated. This should encourage a bit of diversification of activity. Join your friends and colleagues in Iowa City.  
— M.E.A.

that we lose sight of our patients as individual humans. Gadgets and gimmicks cannot replace the personal attention so vital in the patient-physician relationship. Certainly sophisticated computers cannot be considered gadgets, but unfortunately such technological tools are sometimes elevated to this point when used injudiciously.

Actually, the storage and retrieval of data in computers should give physicians more time to communicate with patients. It should strengthen the rapport we have with those we serve. The physician must foster this rapport and not become too engrossed in the mechanics of diagnosis.

We must practice the art of communication continuously. By doing so we can understand the individual better as a living being. The art of medicine must retain its place in patient therapy. Gadgets may serve as tools for the physician; these tools need to be used intelligently. The wise physician will not become subservient to the gadgets, but will use them to complement his communication and other skills in delivering quality care. — M.E.A.

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# Hepatitis B In Southeast Asian Refugees In Iowa

BERY ENGBRETSSEN, M.D.,  
ALDA KNIGHT, M.D., and  
RIZWAN SHAH, M.D.  
Des Moines, Iowa

---

*Refugee health problems have included a significant incidence of Hepatitis B. This report indicates 11% of 434 refugees seen at Broadlawns Medical Center were Hepatitis B surface antigen positive. Prospects for discovering increasing numbers of cases are discussed with new vaccine availability noted as likely to change the picture.*

---

**R**EFUGEES from southeast Asia have been coming into the United States for several years. Though tending to settle in metropolitan areas, especially California, they have scattered to most parts of the country, including smaller communities. Iowa, for example, had roughly 7,500 refugees by the end of 1981; roughly half were living in Polk County (Des Moines).

Dr. Engbretsen is medical director, Primary Care Center, Broadlawns Medical Center, Des Moines, Iowa. Dr. Knight is associated with the Mater Clinic in Knoxville, Iowa; she was formerly director, Department of Internal Medicine, Broadlawns Medical Center. Dr. Shah is director, Department of Pediatrics, Broadlawns Medical Center.

Refugee health care has presented some unique problems. Language and cultural differences head the list. Several other relatively unusual problems have included Hemoglobin E disorders, unusual parasitic infections and a high incidence of Hepatitis B carriers.

Hepatitis B appears to be more prevalent in SEA refugees than those born in western countries.<sup>1</sup> A serosurvey of 624 refugees entering Canada revealed 13.1% Hepatitis B surface antigen reactions, and 50.2% positive for antibody against Hepatitis B (anti HB<sub>s</sub>). Another 3.2% were positive for Hepatitis B core antigen. Similar percentages were found by the Communicable Disease Center in 401 Vietnamese refugees from a camp in Hong Kong.

This is in rather marked contrast to the prevalence in the rest of the U.S. population which runs about 0.3%.

## METHOD

With this in mind, an ongoing survey of refugee patients seen in the Primary Care Center at Broadlawns Medical Center in Des Moines was begun in August of 1981. The Primary Care Center has a comprehensive refugee program including availability of physicians conversant in several southeast Asian languages. Hepatitis B surface antigen screening was provided by the State Hygienic Laboratory. Retesting of HB<sub>s</sub>Ag positive individuals

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT  
SCIENTIFIC PRESENTATION FOR THE MONTH OF MARCH 1984

TABLE I

	Vietnamese	Cambodian	Tai Dam	Lootian	Hmong	Other	Total
Number Tested	165	173	8	135	48	23	552
Number Positive (%)	20 (12.1)	12 (6.9)	1 (12)	19 (14)	11 (22.9)	2 (8.7)	65 (11.8)

after 6 months has begun to confirm the carrier status.

#### RESULTS

Between August 1981, and December 1983, 552 southeast Asian refugees have received initial health assessments at the Primary Care Center in Broadlawns Medical Center. Table I shows the incidence of Hepatitis B surface antigen positive patients in our population, broken down by ethnic group.

TABLE II

HB <sub>s</sub> Ag	HB <sub>e</sub> Ag	HB <sub>c</sub> Ag	Anti-HB <sub>c</sub>	Anti-HB <sub>s</sub>	
+	+	+			Early acute infection
+	+				Acute or chronic infection
+	+		+		Acute or chronic infection
			+		Recent acute infection or previous infection
			+	+	Previous infection
				+	Previous infection or vaccination

The 11.8% is comparable to previous studies. Vertical transmission is known to occur between mother and fetus and 9 patients in this group were suspected of having this mode of spread.

#### DISCUSSION

Our knowledge of the epidemiology of Hepatitis B is based on the detection of antigen and antibody markers. Although these markers are useful, both as research and clinical tools, there is often confusion in the interpretation of the test results.

Currently there are 3 main antigens to Hepatitis B which can be readily obtained in most clinical settings. Hepatitis B surface antigen, HB<sub>s</sub>Ag, discovered by Blumberg in 1964 as the "Australian Antigen,"<sup>2</sup> usually appears within days to weeks after infection. It may disappear after several months or remain indefinitely. Its

persistence may be a marker of chronic infection or a completely asymptomatic carrier state. The chronic carrier state is usually defined as persistence of the antigen for greater than 6 months. These patients remain HB<sub>s</sub>Ag+ for many years or perhaps for life.

Core antigen, HB<sub>c</sub>Ag, is another component of the Dane particle, the infective virus. It is not detectable unless the virus has been stripped of its surface coat by detergent. HB<sub>c</sub>Ag is present shortly after an acute infection and is believed to correlate with continued infection. It may be negative in chronic asymptomatic HB<sub>s</sub>Ag carriers.<sup>3</sup>

Part of the Dane particle, but physically and antigenically distinct, is the "e" antigen. It is only found in HB<sub>s</sub>Ag+ sera; although exceptions have been reported,<sup>4, 5</sup> HB<sub>e</sub>Ag correlates quite highly with infectivity. A person with both surface and e antigen present is much more likely to transmit Hepatitis B either horizontally or vertically<sup>6</sup> than a person with only surface antigen.

The corresponding antibodies Anti HB<sub>s</sub> and Anti HB<sub>c</sub> are markers of the immunological response to the hepatitis virus. Antibody to the surface antigen is indicative of immunity. Such immunity develops either from prior infection or vaccination (active immunity) or from immunoglobulin containing Anti HB<sub>s</sub> (passive immunity). In the future, active immunity as a result of Hepatitis B vaccination will be an increasingly common cause of Anti HB<sub>s</sub>.<sup>7</sup> Patients who have been immunized have only surface antibody present, whereas previously infected individuals may also have core antibody. Anti-HB<sub>c</sub> becomes detectable early in the course of acute Hepatitis B. It remains present in convalescence and may, or may not, persist for months or years thereafter.

Because core antibody may be detected early in the recovery period from an acute infection, it may be the only positive marker of recent Hepatitis B at a time when the surface antigen



is cleared, but the surface antibody titer is too low to be detectable.

The interpretation of the clinical situation demonstrated by the various combinations of antigen and antibody responses are summarized in Table II.

The percentage of HB<sub>s</sub>Ag positive refugees in our study roughly parallels the reported incidence from other studies. This increased incidence among refugees has several health implications.<sup>1</sup>

First of all, vertical transmission of Hepatitis B virus can occur from mother to infant if the mother is a carrier or acutely infected. This appears to occur at birth. In endemic areas of the world vertical transmission has been estimated to cause 20-40% of all chronic carriers, or as many as 50,000,000 cases world-wide. The development of the carrier state in children of HB<sub>s</sub>Ag carriers can be prevented by a series of 3 doses of HBig given at birth, 3 months and 6 months. It appears this practice is efficacious in 75% of infants.<sup>8</sup> The U.S. Public Health Service also recommends administering Hepatitis virus vaccine in conjunction. The vaccine can be given at 3 months of age if the infant has not already developed Hepatitis B antibody. This appears to be indicated to prevent the postnatal passage of the virus to the infant. Obviously, the above infant interventions depend upon the identification of infected mothers prior to delivery. HB<sub>s</sub>Ag screening should be a part of the pre-natal care of southeast Asian refugee women.

Health workers should be made aware if an individual is a carrier of HB<sub>s</sub>Ag as they are at some risk of acquiring infection. This is particularly true of dental personnel or those that handle blood and blood products. All chart covers of antigen + patients in our institution are labeled.

The status of sexual partners of the carrier, and even of household contacts appears to put them at increased risk of infection as is the case with homosexually active males, users of illicit parenteral drugs, clients in institutions for the mentally retarded, and patients of hemodialysis units. Modest increased risk is present in male prison workers, staff of institutions for the mentally retarded and previously mentioned health workers who have frequent blood contact.

The recently approved Hepatitis B virus vaccine has added a new dimension to this illness.

It is clear that time will modify present recommendations but CDC currently recommends that sexual partners of carriers be immunized.<sup>9</sup> However, at least one recent report has questioned the need for this since roughly one half of spouses will be found to already carry anti-HB<sub>s</sub>Ag and that subsequent sero-conversion appears to be almost nil.<sup>10</sup> If vaccine is to be administered to these individuals, it would be cost effective to first screen for anti HB<sub>c</sub>.

In the long run, the most troubling result of this increased carrier state incidence may be the future development of cirrhosis and of primary hepatocellular carcinoma (PHC). PHC is rarely found in the U.S. population. It is one of the most common Asian tumors. A prospective study in Taipei Taiwan<sup>11</sup> has shown that among 22,707 Chinese men followed 5 years, 307 subjects would die. Forty-one of those deaths were from PHC and 19 were from cirrhosis. Forty of those 41 deaths occurred in men who were HB<sub>s</sub>Ag positive. Though this study does not prove cause and effect, this association is the strongest ever established between a virus and human neoplasm. HBV could be a co-factor with some other aetologic agent such as aflatoxin. This study suggested also that it was the HBV that promotes PHC and not cirrhosis. PHC and cirrhosis accounted for 20% of all deaths in this population.

If the factors contributing to these serious diseases continue to operate on immigrants to the U.S., it can be expected that health providers will begin to see an upsurge of PHC in any practice where a significant number of refugees are seen. A review of our deaths in the last 5 years show 2 cases of PHC. Both of these occurred in Asian men who were HB<sub>s</sub>Ag positive.

What kind of care to give the carrier is not totally clear. CDC has recommended observing for symptoms of chronic liver disease. We are testing periodically for elevated liver enzymes, though many refugee patients are lost to follow-up because of frequent moves.

An interesting study has been reported from Peking, China,<sup>12</sup> using immune RNA from horses immunized with purified HB<sub>s</sub>Ag. Fifty patients with chronic persistent hepatitis and HB<sub>s</sub>Ag positive serum were treated with this extract. After treatment, 20% of patient serum returned to negative for HB<sub>s</sub>Ag; another 60% had a significant fall in titer. It is not yet clear

*(Please turn to page 108)*

what future clinical implications this may have. At present, clinical care offers only watchful observation. Ethically, patients should be informed of their at-risk status in the event that future treatments may become available. We provide all our refugees with a wallet-sized card that documents vital health information (such as immunizations) and includes their HB<sub>s</sub>Ag carrier status.

#### SUMMARY

HB<sub>s</sub>Ag screening will identify a significant number of Southeast Asian refugees as carriers. Infants born to mothers who are carriers

should receive HBig and HBV vaccine. Individuals should be notified of their carrier status. Medical and other personnel likely to come in contact with carriers should be made aware of the carrier status of the patient, and know their own antigen-antibody status. The possibility of cirrhosis and PHC should be considered in carriers. The new hepatitis vaccine will change the picture of this disease in the coming years.

#### REFERENCES

The references noted with this paper are available either from the authors or the editors of IOWA MEDICINE.

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# Nonsurgical Treatment Of Subclavian Steal Syndrome By Percutaneous Transluminal Angioplasty

RICHARD B. RUBENSTEIN, M.D., and  
JAMES TATKON-COKER, M.D.

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*This case report describes the performance of a percutaneous transluminal angioplasty. The outcome was successful in relieving both the anatomic and hemodynamic components of subclavian steal syndrome. The authors are supportive of this non-operative technique in selected patients.*

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DEPENDING UPON collaterals to the subclavian artery system and hemodynamics within the Circle of Willis, subclavian artery stenosis or occlusion may be associated with reversal of vertebral artery flow. Classically, the diagnosis is made using arteriography.<sup>1</sup> However, recent studies have shown that Doppler ultrasound blood flow signals, comparing both brachial arteries, will also accurately differentiate subclavian stenosis without steal from subclavian stenosis with reversal of vertebral artery flow.<sup>2</sup>

Surgical intervention using one of a multi-

tude of procedures is generally recommended for symptomatic patients with subclavian steal syndrome. Although the most common approach for treatment of this disorder is the carotid-subclavian bypass, other methods in-

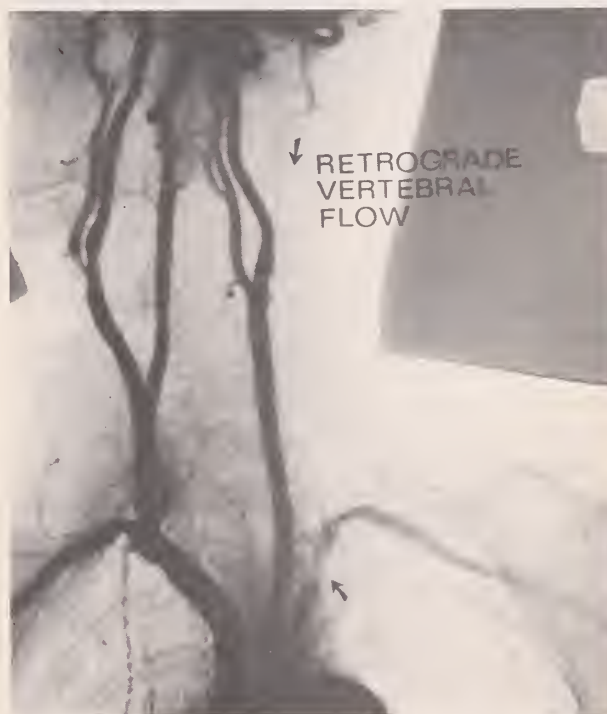


Figure 1. Aortic Arch Arteriogram. The high-grade stenosis of the proximal left subclavian artery (lower arrow) and retrograde vertebral flow (upper arrow) are demonstrated.

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Dr. Rubenstein is associated with Surgical Consultants, P.C., Sioux City, Iowa, as a cardiovascular surgeon. Dr. Tatkon-Coker is in the private practice of cardiology in Cedar Rapids, Iowa.



Figure 2. Arteriogram of left subclavian artery prior to percutaneous transluminal angioplasty. Note the subclavian artery stenosis and the absence of visualization of the left vertebral artery.



Figure 3. The balloon angioplasty catheter is within the subclavian lesion; the balloon is inflated under 4 atmospheres of pressure.

clude the aorto-subclavian bypass, subclavian endarterectomy (with or without patch-angioplasty), subclavian-subclavian bypass, axillo-axillary bypass, carotid-axillary bypass, subclavian-carotid transposition, vertebral-common carotid (side-to-side) anastomosis, and vertebral artery ligation.<sup>3-8</sup> Since the aforementioned procedures carry an operative risk, result in postoperative discomfort, and are expensive, a safe, nonsurgical method of correction would undoubtedly represent a superior approach to the management of subclavian steal syndrome.

Percutaneous transluminal angioplasty was first described in 1964 by Dotter, who utilized a series of coaxial catheters to progressively dilate the vessel lumen.<sup>9</sup> More recently, Grunt-



Figure 4. Arteriogram after percutaneous transluminal angioplasty illustrating relief of the subclavian stenosis and reconstitution of normal left vertebral flow.

zig developed and successfully employed a low compliance balloon catheter to dilate arterial stenosis and to recanalize segmental occlusion.<sup>10</sup> This case report documents the successful management of a symptomatic case of subclavian steal syndrome by percutaneous transluminal balloon angioplasty as first described by Bachman.<sup>11</sup>

#### CASE REPORT

A 69-year old active female reported frequent episodes of vertigo for 2 months. She denied any arm weakness or vertigo related to activity of her arms, and was in otherwise good health. Examination revealed a left arm blood pressure of 95/55 mmHg and a right arm blood pressure of 125/80 mmHg. A loud bruit, heard at the base of the left neck, faintly radiated to the left carotid bifurcation. A directional cerebrovascular Doppler examination was within normal limits.

The patient underwent a right transfemoral arteriogram. The arch study (Figure 1) demonstrated a high-grade (90%) stenosis of the proximal left subclavian artery as well as retrograde left vertebral blood flow; hence, the diagnosis of left subclavian steal syndrome was established.

Percutaneous transluminal angioplasty was performed via Seldinger technique utilizing systemic heparinization. The procedure was recorded cineradiographically. First, a preballoon dilatation, selective left subclavian angiogram was performed (Figure 2). A guidewire was passed through the proximal left subcla-



vian stenosis and a balloon dilatation catheter\* (7 French catheter; 5 mm balloon) was positioned within the stricture. The balloon was inflated for two 20-second periods at the pressure of 3 to 4 atmospheres (Figure 3), after which the catheter was pulled back to the proximal subclavian artery to obtain a post-dilatation angiogram (Figure 4). This demonstrated satisfactory dilatation of the subclavian lesion with re-establishment of normal left vertebral flow.

The patient tolerated the procedure without any complications. Equality of her left and right arm blood pressures was documented and has persisted. The left supraclavicular bruit disappeared, and she has not had any further dizziness after 3 years of follow-up.

#### DISCUSSION

Percutaneous transluminal angioplasty has proven successful in relieving both the anatomic and hemodynamic components of subclavian steal syndrome. The procedure restored the lumen of the stenosed segment and directed the vertebral flow normally. Immediately following the procedure, both arms had — and 18 months later still have — equal blood pressures.

Except for the subclavian endarterectomy, which is rarely used, all surgical methods of treatment for the subclavian steal syndrome are not anatomic. There is evidence that the carotid-subclavian bypass may diminish internal carotid flow, particularly when there is an associated internal carotid artery stenosis.<sup>4-8</sup> The angioplasty technique restores normal patterns of blood flow and eliminates the need for overburdening other branch vessels, i.e., the carotid.

The long-term patency rate of subclavian artery balloon angioplasty is, as yet, unknown. Gruntzig has reported 2-year patency rates of 72% and 87% for successfully dilated femoral-popliteal and iliac artery patients, respectively.<sup>12</sup>

Experience with this non-operative technique for peripheral vascular lesions in selected individuals has been shown to be safe, effective, and less costly when compared to standard surgical approaches. The procedure may be repeated should re-stenosis occur.<sup>13</sup>

The results in this case are encouraging and justify further use of percutaneous transluminal angioplasty for the treatment of subclavian steal syndrome.

#### REFERENCES

The references noted with this paper are available either from the authors or the editors of *IOWA MEDICINE*.

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**APRIL 2, 3, 4 — IOWA CITY, IOWA**

## SCIENTIFIC SESSION

The 1984 Scientific Session of the Iowa Medical Society will be in Iowa City on Monday, Tuesday and Wednesday, April 2, 3 and 4. Program sessions are scheduled at the Highlander Inn on Monday afternoon, beginning at 1:00 P.M. and again on Wednesday morning. The Tuesday session will be at University Hospitals and Clinics. Registration opportunity will be available each day.

### THE PROGRAM COMMITTEE

Janet Wilcox, M.D., Iowa City, serves as chairperson of the 1984 Program Committee. Other members are John R. Anderson, M.D., Boone; Richard M. Caplan, M.D., Iowa City; Annette E. Fitz, M.D., Iowa City (not pictured); Donald L. Kahle, M.D., Dubuque, and Erling Larson, III, M.D., Davenport.



DR. WILCOX



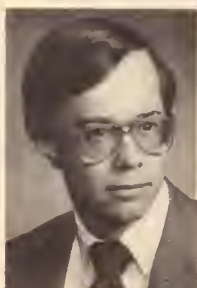
DR. ANDERSON



DR. CAPLAN



DR. KAHLE



DR. LARSON, III

### HOTEL RESERVATIONS

The Highlander Inn is headquarters for the 1984 IMS Scientific Session. Room reservations may be made by calling directly the toll-free number 1/800-272-6444. Please request that your room be taken from the block reserved by the IMS.

## PRESIDENT'S GREETING

### PRESIDENT'S GREETING

Consistent with our tradition, another outstanding series of presentations has been arranged for the IMS Scientific Session. The program is geared to interest practicing physicians in a wide range of specialties, with emphasis on information that will be utilized in everyday patient care. A faculty of 45 speakers will discuss subjects which will enhance the physician's medical knowledge and professional competence. In addition to taking part in a very valuable learning experience, you are cordially invited to participate in the several social functions. This will provide opportunity for you to visit with your friends and colleagues from throughout the state. The Program Committee is commended for arranging this excellent session. Enjoy!



Erling Larson, M.D., President  
Iowa Medical Society

## PROGRAM

All speakers with an academic designation are members of the faculty at the University of Iowa College of Medicine unless otherwise noted.

### MONDAY, APRIL 2 HIGHLANDER INN

11:00 A.M. — REGISTRATION/INFORMATION  
MAIN LOBBY



DR. LARSON



DR. SEEBOHM



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## GENERAL SESSION

Pipers' Ballroom/Main Floor

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### 1:00 P.M. — WELCOME AND INTRODUCTIONS

**Erling Larson, M.D.**, Davenport  
President, Iowa Medical Society

**Paul M. Seebohm, M.D.**, Iowa City  
Executive Associate Dean  
University of Iowa College of Medicine

### 1:15 P.M. — ANOREXIA AND BULIMIA

**Katherine A. Halmi, M.D.**, White Plains,  
New York  
Director of Eating Disorder Program  
Department of Psychiatry  
The New York Hospital, Cornell Medical Center

### 1:50 P.M. — Q & A

### 2:00 P.M. — GERIATRIC STUDY — IOWA FOUNDATION FOR MEDICAL CARE

**John H. Brinkman, M.D.**, Mason City  
Chairman, Long-Term Care Committee/IFMC  
Private Practice of Internal Medicine  
**Ian M. Smith, M.D.**, Iowa City  
Member, Long-Term Care Committee/IFMC  
Professor, Department of Internal Medicine

### 2:20 P.M. — Q & A

### 2:30 P.M. — ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)

**John Phair, M.D.**, Chicago, Illinois  
Chief, Infectious Disease  
Northwestern University School of Medicine

### 3:00 P.M. — IOWA UPDATE

**Laverne Wintermeyer, M.D.**, Des Moines  
Director of Infectious Disease Control and State  
Epidemiologist/State Department of Health

### 3:05 P.M. — Q & A

### 3:15 P.M. — RECESS

### 3:30 P.M. — CASE CONFERENCES — PART I: THE MOST INTERESTING CASE OF THE YEAR . . . AND WHAT WAS LEARNED FROM IT

Four cases were selected from those submitted by  
Family Practice Residency Programs in Iowa for  
presentation at the Scientific Session. Two cases  
will be presented during this time period. Fifteen  
minutes will be allotted for each presentation  
including Q & A period.

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## WHAT'S NEW IN MEDICINE? PART I

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### 4:00 P.M. — RADIOLOGY

**Val D. Dunn, M.D.**, Iowa City  
Clinical Coordinator of NMR Imaging

### 4:10 P.M. — Q & A



DR. BRINKMAN



DR. HALMI

### 4:15 P.M. — ONCOLOGY/CHEMOTHERAPY

**C. Patrick Burns, M.D.**, Iowa City  
Professor, Department of Internal Medicine

### 4:25 P.M. — Q & A

### 4:30 P.M. — ANESTHESIA

**John H. Tinker, M.D.**, Iowa City  
Professor and Head  
Department of Anesthesia

### 4:40 P.M. — Q & A

### 4:45 P.M. — NEUROLOGY

**Maurice Van Allen, M.D.**, Iowa City  
Professor and Head  
Department of Neurology

### 4:55 P.M. — Q & A

### 5:00 P.M. — ADJOURNMENT

### 6:00 P.M. — RECEPTION FOR IMS MEMBERS AND GUESTS, HIGHLANDER INN

Hosted by the University of Iowa Foundation and  
College of Medicine



DR. SMITH



DR. TINKER



DR. DUNN



DR. BURNS



MR. COLLOTON



DR. VAN ALLEN

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## TUESDAY, APRIL 3

### University Hospitals & Clinics

7:30 A.M. — REGISTRATION

Petersen Conference Room/E-140  
(Coffee and rolls available)

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## GENERAL SESSION

Petersen Conference Room/E-140

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### 8:00 A.M. — UPDATE: UNIVERSITY HOSPITALS & CLINICS

**John W. Colloton, Iowa City**  
Director, University Hospitals & Clinics  
Assistant to the President for Statewide Health Services



MR. KEENAN



DR. DRISCOLL



MS. HOFFMAN



DR. RICHERSON

### 8:10 A.M. COMPUTERS IN MEDICAL PRACTICE: THE GTE MEDICAL INFORMATION NETWORK AND AMA/NET

**Vincent D. Keenan, Chicago, Illinois**  
Account Executive, Department of Research and  
Development, Medical Information Network  
Division, American Medical Association

### 8:30 A.M. — RECESS

### 8:40 A.M. — DOCTOR'S CHOICE

(Concurrent small-group sessions)

### COMPUTERS IN MEDICINE: WHAT? WHEN? HOW?

(Demonstrations)

#### HOSPITAL COMPUTER SYSTEMS

**James Wagner, M.S., Director**  
Hospital Systems Division  
University Hospitals & Clinics

#### GTE MEDICAL INFORMATION NETWORK AND AMA/NET

**Vincent D. Keenan, Medical Information Network  
Division, American Medical Association**

#### USING THE COMPUTER IN PATIENT EDUCATION

**Barry Ginsberg, M.D., Ph.D.**  
Associate Professor, Department of Internal  
Medicine

#### APPLYING THE COMPUTER TO MEDICAL RESEARCH AND DATA ACQUISITION

**Anthony Frey, Ph.D.**  
Assistant Research Scientist  
Department of Anesthesiology

#### APPLYING THE COMPUTER TO AN OFFICE PRACTICE

**Patrick G. Campbell, M.D., Davenport**  
Private Practice of Psychiatry

### NEW DRUGS: WHAT TO GIVE AND WHEN TO GIVE THEM

**Mark I. Goldberg, M.D., Iowa City**  
Assistant Professor  
Department of Internal Medicine

**Roger G. Kathol, M.D., Iowa City**  
Assistant Professor  
Department of Internal Medicine

**Ross Feldman, M.D., Iowa City**  
Assistant Professor  
Department of Internal Medicine and Pharmacology

**Annette E. Fitz, M.D., Iowa City**  
Professor  
Department of Internal Medicine

### GENETICS

**James W. Hanson, M.D., Iowa City**  
Associate Professor  
Department of Pediatrics



## MANAGEMENT OF THE ADULT ASTHMATIC

**Charles E. Reed, M.D.**, Rochester, Minnesota  
Chairman, Division of Allergic Disease and Internal  
Medicine  
Mayo Clinic

**10:00 A.M. — RECESS**

**10:15 A.M. — DOCTOR'S CHOICE**

(Concurrent small-group sessions)

### COMPUTERS IN MEDICINE: WHAT? WHEN? HOW?

(Repeat of 8:40 A.M. Program)

### SEXUALITY

**Charles E. Driscoll, M.D.**, Iowa City  
Associate Professor  
Department of Family Practice

**Georgianna Hoffman, R.N., M.A., C.S.**  
Coordinator, Family Stress Clinic  
Department of Family Practice

### ALLERGY FOR THE 80's

**Hal B. Richerson, M.D.**, Iowa City and Colleagues of  
the Division of Allergy-Immunology

### CASE PRESENTATIONS: PEDIATRIC RESPIRATORY DISEASE

**Miles M. Weinberger, M.D.**, Iowa City  
Professor of Pediatrics

**Stephen Wolf, M.D.**, Iowa City  
Fellow-Pediatric Allergy/Pulmonary

**Richard Ahrens, M.D.**, Iowa City  
Assistant Professor of Pediatrics

**Jeff Wagener, M.D.**, Iowa City  
Assistant Professor of Pediatrics

**11:45 A.M. — RECESS**

**NOON — DUTCH TREAT LUNCHEON**

POSTER DISPLAY

BOWEN (BASIC) SCIENCE BUILDING

## GENERAL SESSION

University Hospitals and Clinics  
Medical Alumni Auditorium/E-331

**1:15 P.M. — RESPIRATORY HAZARDS OF  
AGRICULTURE**

**Charles E. Reed, M.D.**, Rochester, Minnesota  
Chairman, Division of Allergic Disease and Internal  
Medicine, Mayo Clinic

**1:50 P.M. — Q & A**

## WHAT'S NEW IN MEDICINE? PART II

**2:00 P.M. — OTOLARYNGOLOGY**

**Brian F. McCabe, M.D.**, Iowa City  
Professor and Head  
Department of Otolaryngology



DR. REED



DR. McCABE

**2:10 P.M. — Q & A**

**2:15 P.M. — OPHTHALMOLOGY**

**Charles D. Phelps, M.D.**, Iowa City  
Professor and Head  
Department of Ophthalmology

**2:25 P.M. — Q & A**

**2:30 P.M. — DERMATOLOGY**

**John S. Strauss, M.D.**, Iowa City  
Professor and Head  
Department of Dermatology

**2:40 P.M. — Q & A**

**2:45 P.M. — PEDIATRICS**

**Fred G. Smith, M.D.**, Iowa City  
Professor and Head  
Department of Pediatrics

**2:55 P.M. — Q & A**

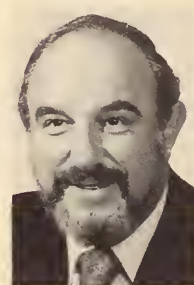
**3:00 P.M. — RECESS**



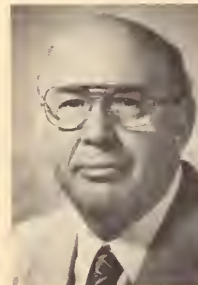
DR. PHELPS



DR. SMITH



DR. STRAUSS



MR. TUCKER



DR. JOHNSON



DR. HATTERY

**3:15 P.M. — CASE CONFERENCES — PART II: THE MOST INTERESTING CASE OF THE YEAR . . . AND WHAT WAS LEARNED FROM IT**

Four cases were selected from those submitted by Family Practice Residency Programs in Iowa for presentation at the Scientific Session. Two cases will be presented during this time period. Fifteen minutes will be allotted for each presentation including Q & A period.

**3:45 P.M. — CHRONIC PELVIC PAIN**

**Susan Johnson, M.D.**, Iowa City  
Assistant Professor  
Department of Obstetrics and Gynecology

**4:10 P.M. — Q & A**

**4:15 P.M. — A NEW LOOK AT INFORMED CONSENT**

**William M. Tucker**, Attorney, Iowa City  
Phelan, Tucker, Boyle & Mullen

**4:50 P.M. — Q & A**

**5:00 P.M. — ADJOURNMENT**



DR. DICKINS



DR. CORRY



MR. LYNN



DR. MARTIN

**6:00 P.M. — RECEPTION AND BANQUET FOR IMS MEMBERS AND GUESTS, HIGHLANDER INN**

Special Presentation: The Voyager

Mission to the Outer Planets

Donald A. Gurnett, Ph.D.

Professor

Department of Physics and Anatomy

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**WEDNESDAY, APRIL 4  
HIGHLANDER INN**

**7:30 A.M. — REGISTRATION**

Main Lobby (Coffee and rolls available)

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**GENERAL SESSION**

Pipers' Ballroom/Main Floor

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**8:00 A.M. — THE ROLE OF CT BODY SCANS IN DIAGNOSTIC PROBLEMS — ERSKINE MEMORIAL LECTURE**

**Robert R. Hattery, M.D.**, Rochester, Minnesota  
Chairman, Department of Diagnostic Radiology  
Mayo Clinic

**8:40 A.M. — Q & A**

**8:50 A.M. — SLEEP APNEA**

**Quentin S. Dickens, M.D.**, Iowa City  
Assistant Professor  
Department of Neurology

**9:15 A.M. — Q & A**

**9:25 A.M. — WHAT TO LOOK FOR IN EXAMINING THE MOUTH**

**Gilbert Lilly, D.D.S.**, Iowa City  
Professor and Head  
Department of Oral Pathology and Diagnosis  
University of Iowa College of Dentistry

**9:40 A.M. — Q & A**

**9:45 A.M. — RECESS**

**10:00 A.M. — CHANGES IN HOSPITAL PRACTICE: COPING WITH DRGS**

**Edward R. Lynn**, Council Bluffs  
Chairman, Board of Directors, Iowa Hospital Association, Administrator, Jennie Edmundson Memorial Hospital

**10:20 A.M. — Q & A**

**10:30 A.M. — WHAT'S OLD IN MEDICINE?**

**John Martin, M.D.**, Clarinda, Iowa  
Member, IMS Historical Committee  
Clinical Professor  
Department of Surgery

**10:55 A.M. — Q & A**





DR. WINOKUR



DR. PITKIN

## WHAT'S NEW IN MEDICINE? PART III

### 11:00 A.M. — INTERNAL MEDICINE

**Barry M. Sherman, M.D.**, Iowa City  
Professor  
Department of Internal Medicine

### 11:10 A.M. — Q & A

### 11:15 A.M. — PSYCHIATRY

**George Winokur, M.D.**, Iowa City  
Professor and Head  
Department of Psychiatry

### 11:25 A.M. — Q & A

### 11:30 A.M. — OBSTETRICS AND GYNECOLOGY

**Roy M. Pitkin, M.D.**, Iowa City  
Professor and Head  
Department of Obstetrics and Gynecology

### 11:40 A.M. — Q & A

### 11:45 A.M. — SURGERY

**Robert J. Corry, M.D.**, Iowa City  
Professor and Head  
Department of Surgery

NOON — ADJOURNMENT

## SPECIAL OPTION — CPR RECERTIFICATION FOR PHYSICIANS AND CERTIFICATION CLASS FOR SPOUSES

Physicians will have the opportunity to recertify in cardiopulmonary resuscitation on Wednesday afternoon, April 4. The class will run from 1:30 P.M. until 3:30 P.M. Also on Wednesday a certification class for spouses will be conducted from 1:00 P.M. until 4:00 P.M. Both classes will be in the Emergency Medical Services Learning Center, located on the first floor of the Carver Pavilion, University Hospitals. Advance registration is necessary. Applications should be submitted to IMS headquarters no later than March 23. A fee of \$4.00 will be charged. Make checks payable to the Iowa Medical Society.

## CME CREDIT

The 1984 Scientific Session of the Iowa Medical Society is co-sponsored by the University of Iowa College of Medicine. As an organization accredited for CME, the U. of I. College of Medicine certifies that this CME offering meets the criteria for 14½ hours in Category I of the AMA Physician's Recognition Award, provided it is used and completed as designated.

In addition, the program has been approved for 14 hours of prescribed credit by the American Academy of Family Physicians.

## SPECIAL EVENING EVENTS

### MONDAY, APRIL 2

**RECEPTION** — A reception for physicians and their spouses will occur from 6:00 P.M. until 7:00 P.M. in Pipers' Ballroom, Highlander Inn. This hospitality function is hosted by the University of Iowa Foundation and the U. of I. College of Medicine.

**CONCERT** — Jeane-Pierre Rampal and Alexandre Lagoya, nationally known artists on the flute and guitar are scheduled for a duo concert at Hancher Auditorium in Iowa City on Monday evening at 8:00 P.M. Ticket prices range from \$5 to \$15. Interested physicians should contact the Ticket Office, Hancher Auditorium, 1/800-426-2437.

### TUESDAY, APRIL 3

**RECEPTION** — A "wine and cheese" reception for physicians and their spouses will be hosted by the Iowa Medical Political Action Committee from 6:15 P.M. until 7:15 P.M. in Pipers' Ballroom.



DR. GURNETT

**BANQUET** — The IMS Scientific Session Banquet will begin at 7:00 P.M. in Pipers' Ballroom. The banquet program will feature a presentation by Donald A. Gurnett, Ph.D., on "THE VOYAGER MISSION TO THE OUTER PLANETS." Dr. Gurnett is a professor of physics and astronomy at the University of Iowa and has an instrument on the VOYAGER spacecraft. Reservations requested. See reservation form on page 8 of program.

## LUNCHEON

Tuesday, April 3, a Dutch-treat lunch will be available at the Basic Science Building and several exhibits of special interest to physicians will be on display. Advance luncheon reservations are encouraged.

## AUXILIARY

Spouses of physicians are welcome at any of the Scientific Program Sessions and social events.

In addition, the Auxiliary will sponsor a Financial Planning Seminar for spouses on Tuesday, April 3, in cooperation with Monetary Consultants, Inc., of Des Moines. This day-long "down-to-earth" seminar will be at Highlander Inn. A pre-registration fee of \$40 has been established to cover a continental breakfast, lunch and seminar materials. Checks are payable to the IMS Auxiliary, and should be mailed to Sandy Nichols, 1001 Grand Avenue, West Des Moines, Iowa 50265.

## ACKNOWLEDGMENT

The physician members of the Iowa Medical Society give special thanks to the companies listed below for the educational grants provided to support the 1984 Scientific Session.

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Appreciation is also extended to Blue Shield for sponsoring the coffee functions for physicians and their spouses; to the University of Iowa Foundation and the College of Medicine for hosting the reception on Monday, April 2; and to the Iowa Medical Political Action Committee for hosting the reception on April 3. The Society is grateful for this support.

The Iowa Thoracic Society has arranged for the presentation by Charles Reed, M.D., Mayo Clinic. The Society will also hold a business session/box lunch at 11:45 a.m. on Tuesday, April 3, Bean Conference Room, University Hospitals.

## 1984 SCIENTIFIC SESSION REGISTRATION FORM

Please Detach and Return This Form to IMS Headquarters

I PLAN TO ATTEND—

	PLEASE CHECK	NUMBER ATTENDING
The Scientific Session		
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On Tuesday, April 3	_____	_____
On Wednesday, April 4	_____	_____
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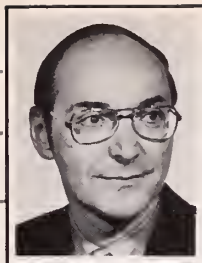
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Richard M. Caplan, M.D.

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## OUR MAN IN EDUCATION

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### THE HALF-LIFE OF KNOWLEDGE?

**H**OW OFTEN I've seen or heard that the half-life of medical knowledge is 5 years. Sometimes the number is 6 or 7, and once I heard 10, but 10 is far less dramatic than 5. I've decided that drama is indeed what is sought by such a comment, for it is, in fact, a pseudo-fact.

The notion of half-life arose specifically in the domain of atomic physics, where it has a precise and measurable meaning about the speed with which a particular isotope loses its radioactivity. Several years ago, curious to learn who first said it and how that person could make an analogous statement regarding medical knowledge, I began a quest that has proven interesting, but fruitless. Such a half-life, it seems clear to me now, is only an analogue, or a metaphor.

My search to document the rate of change of medical information — and please note that information is not synonymous with knowledge — turned up some interesting observations about scientific information, mostly from atomic physicists talking about their own discipline. Conspicuous among that group was J. Robert Oppenheimer and the time was the early 1950's. Here are representative comments:

*I think that such positive knowledge doubles in less than a generation, perhaps in a decade. (R. OPPENHEIMER, 1953)*

*If, as had been suggested, the half-life of the medical knowledge of a doctor was only 5 years, then clearly continuing education was essential . . . (W. GERMER, 1978)*

*. . . be impressed with the truth of the statement that the half-life of medical knowledge is 5 years. (R. DERBYSHIRE, 1968)*

*Biomedical knowledge doubles every 8 to 10 years. (J. COOPER, 1974)*

*There is little dissent from the view that the world of medicine is changing so rapidly . . . that what is current today will be dated in a few months and obsolete in a few years. (G. MILLER, 1967)*

But even such mensurationally-minded scientists never seemed to refer to data or investigation that lay behind a remark that had, after all, the linguistic shape and logic that implied a careful attempt at measurement. It was, instead, merely a way to impress the listener or reader that there was lots being discovered. Not so strange, perhaps, to find medical people transferring the metaphor from "scientific information," in general, to "medical information" or even to "medical knowledge" without a hint of apology for such inaccuracy or arrogance.

The number per year of published articles can be counted, as can the number of persons calling themselves "scientists" in *Who's Who* or census records, but any such indicators, even if precisely accurate, would extrapolate only as an *intimation* of true advance of information or knowledge.

Recently I spent some time with a couple of excellent family doctor friends as they saw patients in their offices. I made notes about what they asked the patients, and what physical examination they did, diagnoses they made, tests they ordered, and therapy they suggested. We found it so hard to tease out when or where they learned what they needed in order to perform those various steps, that we soon gave up the attempt to be precise. I was impressed, though, that much of the information and skill was derived from days of medical school or internship, which had ended 25 years earlier in the case of the older doctor. Much of what was newer in their behavior consisted of the prescribing of newer drugs. I suspect the same may be true of my own clinical work in dermatology. Perhaps it would be different in other disciplines. But even if I use much that is "old" (dating back in my case to the early 1950's), I certainly would hate to for-

*(Please turn to page 114)*

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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

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## OUR MAN IN EDUCATION

(Continued from page 113)

sake what is newer, which I have learned in that component of the medical education continuum called "continuing education."

And so I've decided, finally, not to challenge speakers or write letters to editors about the dreadful inaccuracies of such half-life proclamations. Instead, I'll accept the half-life of knowledge as an interesting figure of speech. After all, when one looks closely, it is estimation, impression, speculation, metaphor and faith that govern most of what is important in our lives, anyway — so why not in this, too?

### Letter to the Editor

## SORRY, PULMONOLOGISTS

*Dear Editor:*

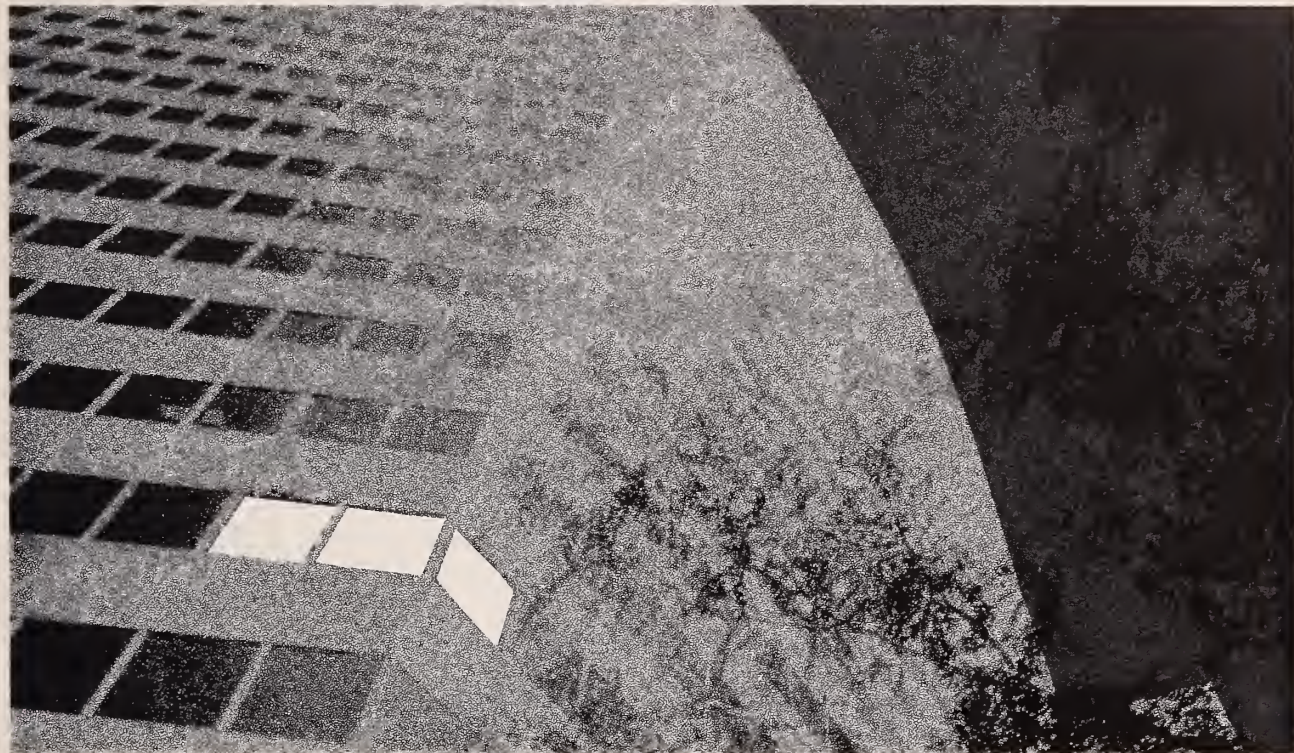
As a follow up to our conversation regarding the omission of pulmonologists within the glossary of medical specialties published in the JOURNAL OF THE IOWA MEDICAL SOCIETY (November, 1983), I wish to restate my disappointment that the specialty was not recognized and to request that the next issue of the JOURNAL correct this oversight.

Physicians who specialize in pulmonary medicine have indeed had years of added training in their chosen specialty area as your "glossary" suggests. In fact, many are board certified pulmonologists having spent two or three years in pulmonary fellowship training programs. The Pulmonary Disease Division, Department of Internal Medicine, University of Iowa College of Medicine, is nationally recognized for its fellowship training program. Several former fellows of this program are now board certified pulmonologists practicing in Iowa.

Recognizing that the article/list was developed by the Patient Education Committee, Department of Family Practice, University of Iowa College of Medicine, and not the IMS, please inform me if we need to contact the physician in charge of this project to request the desired change in the glossary. — **GEORGE G. CAUDILL, M.D.**, *Des Moines, President, Iowa Thoracic Society*



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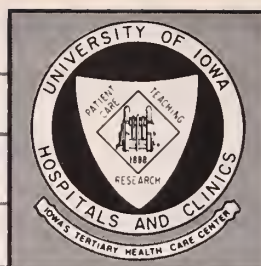
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## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### HUMAN INSULIN

**I**N THE PAST ALL INSULINS available for clinical use have been preparations of purified extracts of bovine and porcine pancreas. Recently, insulin which is biochemically identical to that produced by the human pancreas has been developed; it has theoretical advantages over animal insulin. Among these are an increase in the worldwide supply of insulin and the possible avoidance of antibody formation which universally accompanies the use of beef and pork insulin.

The chemical structure of insulin is that of 2 chains of amino acid molecules that are designated A and B and are linked by 2 disulfide bonds. Although all animal insulins are strikingly similar in composition, there are distinct species differences in the sequence of the amino acids. Bovine insulin differs from human insulin in 3 of the 51 acids in the 2 chains. Porcine insulin differs from human insulin only in the terminal molecule on 1 chain (alanine instead of threonine).

#### HUMAN INSULIN PREPARATIONS

Semisynthetic human insulin is obtained by the enzymatic conversion of porcine insulin to human insulin, substituting threonine for alanine. This product, marketed by Squibb-Novco, is FDA approved and commercially available in 2 formulations: regular insulin (Actrapid®) and

lente, an insulin-zinc suspension of more prolonged activity (Monotard®). Extensive analyses show chemical, physical, and immunologic identity of semisynthetic human insulin and insulin extracted from human cadaveric pancreas.

Human insulin produced by recombinant DNA technology is also FDA approved and available in this country. The method of synthesis involves the separate production of A and B chains in *Escherichia coli* with subsequent chemical linkage to form human insulin. This product is marketed by Lilly (Humulin®) in both regular and NPH formulations. It, like semisynthetic human insulin, has been shown to be equivalent to insulin obtained from human cadaveric pancreas. Human insulin (recombinant DNA origin) has been shown to be free of contamination with *E. coli* peptides and untainted by impurities found in animal insulin preparations. These impurities include proinsulin, pancreatic polypeptide, somatostatin, glucagon, and vasoactive intestinal peptide. These contaminants are a potential cause of immunogenicity in animal insulins.

#### CLINICAL STUDIES OF HUMAN INSULIN (RECOMBINANT DNA ORIGIN)

#### Pharmacologic/Biologic Aspects

Human insulin (recombinant DNA origin) has been extensively studied in animals, in humans, and in vitro. Most human studies compare human insulin (recombinant DNA origin) to highly purified pork insulin which is the animal insulin formulation of the highest purity and least immunogenicity. Pharmacologic studies comparing these 2 insulins show absorption to be virtually identical. There are

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.



some studies that suggest slightly accelerated absorption of regular human insulin (recombinant DNA origin) in normal volunteers. There are also data which suggest slightly shorter duration of action of NPH human insulin (recombinant DNA origin) as compared to NPH pork insulin. The clinical significance, if any, of these findings is uncertain. In terms of biologic effects, human insulin (recombinant DNA origin) as compared to highly purified pork insulin shows identical ability to suppress glucose output and stimulate peripheral glucose uptake in diabetic subjects.

### Immunologic Aspects

In patients treated with animal insulin, anti-insulin antibodies from all 5 antibody classes have been found. IgG antibody is quantitatively the most significant.

A large double-blind study of patients maintained on mixed beef-pork or purified pork insulin for at least 6 months then switched to either human (recombinant DNA origin) insulin or maintained on purified pork insulin showed a significant reduction in insulin antibody levels. There were small but definite dec-

rements in antibody levels in those patients switched to human insulin as compared to those maintained on purified pork insulin.

In 4 diabetic patients with the uncommon disorder of immunologic insulin resistance associated with high levels of anti-insulin antibodies and insulin requirements greater than 100-200 units per day, affinity of the antibody for human insulin was found to be significantly less than that for purified pork insulin. Several reports describe patients with insulin allergy or immunologic insulin resistance who were successfully treated with human insulin (recombinant DNA origin) after failing to respond to purified pork insulin.

However, studies in diabetic patients treated only with human insulin (recombinant DNA origin) show antibody formation at about the same rate as those treated only with purified pork insulin, that is, about 50% after 6 months. The immunogenicity of human insulin may be due to adjuvant-like properties of its repository formulation (zinc suspension). Although circulating insulin antibodies are not often of clinical significance, they can be a cause of hypoglycemia through alterations in

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James Folk, M.D.

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Peter Whitted, M.D.

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## DRUG THERAPY REVIEW

(Continued from page 117)

insulin kinetics. Allergic reactions (local or systemic) and lipoatrophy have thus far not been seen in patients treated only with human insulin. Lipohypertrophy is not immune mediated; it was seen in 2 of 101 patients treated for 6 months with human insulin.

### Clinical Trials

Three major clinical trials in this country and abroad have shown human insulin (recombinant DNA origin) to be safe and equally effective when compared in a double-blind fashion to mixed beef-pork or purified pork insulin. There was some evidence of higher fasting blood sugars in the patients on human insulin, consistent with a slightly shorter duration of action of NPH human insulin.

#### SEMISYNTHETIC HUMAN INSULIN

Though less extensively studied than human insulin of recombinant DNA origin, the

results of studies on semisynthetic human insulin have been essentially the same. Unlike human insulin (recombinant DNA origin), most data have not shown more rapid absorption of regular semisynthetic human insulin as compared to purified pork insulin. No definite differences between lente semisynthetic human insulin and purified pork insulin have been shown. Immunologic studies show lower levels of anti-insulin antibodies (IgG and IgE) in patients on human insulin when compared to those receiving purified pork insulin from the onset of their diabetes.

### SUMMARY

With minor exceptions, human insulin appears equivalent to purified pork insulin. Regular human insulin may be more rapidly absorbed than pork insulin. NPH human insulin may have a slightly shorter duration of action than NPH animal insulins. These findings require further study to clarify their significance, if any. There are no major advantages at this point of human insulin over purified pork insulin. Local or systemic allergic reactions, immunologic insulin resistance, and lipoatrophy are indications for purified pork insulin or human insulin. Either one of these preparations is probably preferable to mixed beef-pork or beef insulin in those patients who may require insulin therapy only intermittently, for example, during surgery, gestation, or intercurrent illness, since intermittent insulin use seems to predispose to allergic reactions. Finally, human insulin (recombinant DNA origin) is potentially an inexhaustible supply of a highly purified product that is essential to the lives of millions throughout the world. — Daniel Weiss, M.D., Fellow, Division of Endocrinology and Metabolism, Department of Internal Medicine.

### References

1. Skyler, J. S., and Raptis, S. (Eds.): Symposium on biosynthetic human insulin. *Diabetes Care*, 4:139, 1981.
2. Skyler, J. S. (Ed.): Symposium on human insulin of recombinant DNA origin. *Diabetes Care*, 5 (Suppl. 2), 1982.
3. Karam, J. H., and Etzwiler, D. D. (Eds.): International symposium on human insulin (Novo). *Diabetes Care*, 6 (Suppl. 1), 1983.
4. Bolli, G. et al.: Abnormal glucose counterregulation in insulin-dependent diabetes mellitus. Interaction of anti-insulin antibodies and impaired glucagon and epinephrine secretion. *Diabetes*, 32:134, 1983.
5. Kahn, C. R., and Rosenthal, A. S.: Immunologic reactions to insulin: Insulin allergy, insulin resistance, and the autoimmune insulin syndrome. *Diabetes Care*, 2:283, 1979.

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**P**HYSICIANS AND OTHER health care personnel frequently request information that is often available from standard reference sources. We take this opportunity to compile a list of the references we use routinely. Cost and ordering information are included. None of these paperbacks are expensive compared to standard medical references.

*Control of Communicable Diseases in Man*, 13th Edition, Benenson, Editor. American Public Health Association, 1015-15th Street, N.W., Washington, D.C. 20005. Price, \$7.50. This is perhaps the best quick reference for infectious disease information in the U.S. It includes a brief description of the disease, infectious agent, occurrence, reservoir, mode of transmission, incubation period, period of communicability, susceptibility and resistance, and methods of control including specific treatment. This book is so valuable and so inexpensive, every physician in Iowa should have a copy. The 13th edition includes new sections on campylobacter, toxic-shock syndrome, and current management of hepatitis B. We suggest ordering copies for all clinic staff.

*Report of the Committee on Infectious Diseases — American Academy of Pediatrics Red Book*, 1982. American Academy of Pediatrics, P.O. Box 1034, Evanston, Illinois 60204. Price, \$15 plus \$1.60 shipping. A comprehensive book on infectious disease information and management. In addition, it contains an excellent appendix with table of immunization schedules, drug dosages, diseases transmitted by pets and ro-

dents, hospital isolation techniques and etiologic agents of common pediatric diseases. This book is classified in the "essential" category for pediatric and family practice.

*University Hygienic Laboratory Manual of Services*. University of Iowa Hygienic Laboratory, Oakdale Campus, Iowa City, Iowa 52242. Available on request without charge. This publication outlines tests available from the University Hygienic Laboratory and how to collect and submit specimens properly. It belongs in the essential category for diagnosis and treatment of infectious diseases. It also provides information to cover the broad expanse of environmental services as they may relate to human illnesses.

*Handbook of Common Poisonings in Children*, 2nd Ed, American Academy of Pediatrics (address above). Price \$15 plus \$1.60 shipping. Very popular concise reference on managing poisonings in children.

*A Guide to the Work Relatedness of Disease*, Revised Edition. Stock #PB 298-561. National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161. Price, \$22.00. This reference prepared by the National Institute for Occupational Safety and Health (NIOSH), discusses occupational disease in general categories, e.g., inorganic lead and what occupations may be affected. It includes medical evaluation, epidemiology, signs/symptoms, laboratory and clinical evaluation, evidence of exposure and allowable exposure limit. This reference is not comprehensive but intended to illustrate methods. It may be useful to clinicians who are plant physicians or manage a large number of patients with occupational related diseases. Due to its cost, it is recommended only for the forementioned practitioners.

*Occupational diseases — A Guide to Their Recognition*, Revised Edition. NIOSH, Publications,

This information on public matters is furnished and sponsored by the Iowa State Department of Health.



4676 Columbia Parkway, Cincinnati, Ohio 45226. Available on request without charge. This NIOSH reference is comprehensive and includes a section on sources of consultation and reference aids. In the average medical practice, this book is probably more useful than the foregoing publication.

*CDC Guidelines for Isolation Precautions in Hospitals and Guideline for Infection Control in Hospital Personnel.\** SLACK, Inc., 6900 Grove Road, Thorofare, New Jersey 08086. Price, \$5 pre-paid. This publication was recently revised by the Centers for Disease Control (CDC) but will not be printed and distributed by the federal government. The revised guidelines recommend not only an isolation system based on categories of isolation but also an alternative disease-specific isolation system. The latter system offers economical incentives since only the particular precautions to interrupt transmission of a specific disease are recommended. It includes discussion of precautions to prevent disease transmission to medical personnel including AIDS, hepatitis B, herpes simplex, tuberculosis, meningococcal disease and even scabies. This book is in the essential category for personnel dealing with infection control.

*Recognition and Management of Pesticide Poisonings*, 3rd Ed. by Donald P. Morgan, M.D., Ph.D. Preventive Medicine and Environmental Health, Univ. of Iowa — Oakdale Campus, 124AMRF, Iowa City, Iowa 52242. Single copies available on request without charge. This book offers a description of common pesticides, toxicology, signs and symptoms, diagnosis, and treatment in a concise informative manner. While it may not be used frequently, it would be extremely helpful in managing patients with exposures.

*Health Information for International Travel*, 1983. Stock #017-023-00147-7. Supt. of Documents, U.S. Gov't Printing Office, Washington, D.C. 20402. Price, \$4.25 per copy. (Tel. #202-783-3238). This reference lists vaccinations required for movement between countries, malaria risk information, and general information about disease problems associated with international travel. Although vaccination tables become outdated, this publication is worthwhile, especially the general sections discussing individual protective measures dur-

ing travel. Very helpful reference for travel agencies and physicians assisting patients before travel.

*Diseases Transmitted by Foods — A Classification and Summary.* Frank Bryan, Ph.D., Center for Professional Development and Training, CDC, Atlanta, Georgia 30333. Available on request without charge. This booklet provides a matrix layout of foodborne diseases and intoxications. It is very helpful in comparing diseases according to their characteristics when outlining a differential diagnosis, approaches to laboratory testing, and high-risk foods. Control measures are briefly discussed but individual patient treatment is not discussed. This reference is not essential but is extremely useful in understanding a foodborne disease when compared to others.

*Sexually Transmitted Diseases Treatment Guidelines — 1982.* (MMWR Supplement Reprint). Disease Prevention (VD), Iowa State Dept. of Health, Lucas State Office Building, Des Moines, Iowa 50319. Available on request without charge. Monograph describing current specific treatment of STD's.

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\* Special Supplement of Infection Control, Vol. 4, No. 4, July/August, 1983.

# January 1984 Morbidity Report

Disease	Jan. 1984 Total	1984 to Date	1983 to Date	Most Jan. Cases Reported From These Counties
Amebiasis	4	4	1	Des Moines, Plymouth Polk
Brucellosis	0	0	0	
Chickenpox	515	515	754	Scattered
Compylobacter	19	19	22	Scattered
Cytomegalovirus	3	3	2	Des Moines, Sioux
Eaton's Agent infection	3	3	36	Clinton, Marshall
Encephalitis, viral	1	1	3	Polk
Erythema infectiosum	0	0	3	
Gastroenteritis (GIV)	1183	1183	1559	Scattered
Giardiasis	16	16	19	Scattered
Hepatitis, A	3	3	2	Dubuque, Muscatine, Polk
Hepatitis, B	10	10	4	Scattered
Hepatitis, Non A-B	4	4	1	Scattered
Hepatitis type unspecified	1	1	2	Jefferson
Herpes Simplex	47	47	58	Scattered
Herpes Zoster	0	0	3	
Histoplasmosis	0	0	0	
Infectious mononucleosis	14	14	17	Scattered
Influenza, lab confirmed	1	1	1	Scott
Influenza-like illness (URI)	3170	3170	3242	Scattered
Legionellosis	0	0	0	
Malaria	0	0	0	
Meningitis aseptic	2	2	10	Clinton, Scott
bacterial	17	17	15	Scattered
meningococcal	8	8	3	Scattered
Mumps	1	1	17	Polo Alto
Pertussis	3	3	1	Polo Alto, Polk
Robies in animals	8	8	13	Scattered
Reye Syndrome	0	0	0	
Rheumatic Fever	0	0	0	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmonellosis	25	25	15	Scattered
Shigellosis	7	7	1	Scattered
Tetanus	0	0	0	
Toxic Shock Syndrome	1	1	1	Story
Tuberculosis total ill	4	4	8	Scattered
bact. pos.	4	4	7	Scattered
Typhoid Fever	0	0	0	
Veneral diseases: Gonorrhea	342	342	363	Scattered
Syphilis	3	3	2	Dollos, Harrison, Scott

Other Non-Reportable Diseases: Chlamydia — 1, Hamilton; Ureoplasma  
Urosolycium — 3, Polk; Respiratory Syncytial — 1, Marion; Poroinfluenza  
virus — 1, Dickinson.

## References:

1. Stone PH, Turri ZG, Muller JE. Efficacy of nifedipine therapy for refractory angina pectoris. *Am Heart J* 104:672-681, September 1982
2. Antman E, Muller J, Goldberg S, et al. Nifedipine therapy for coronary artery spasm: Experience in 127 patients. *N Engl J Med* 302:1269-1273, June 5, 1980

## BRIEF SUMMARY

### PRDCARDIA\* (nifedipine) CAPSULES

For Oral Use

**INDICATIONS AND USAGE:** I. **Vasospastic Angina:** PRDCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation; 2) angina or coronary artery spasm provoked by ergonovine; or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PRDCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and/or adequate doses of beta blockers.

II. **Chronic Stable Angina (Classical Effort-Associated Angina):** PRDCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PRDCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PRDCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

### CONTRAINDICATIONS:

Known hypersensitivity reaction to PRDCARDIA.  
**WARNINGS:** **Excessive Hypotension:** Although in most patients, the hypotensive effect of PRDCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PRDCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PRDCARDIA and a beta blocker, but the possibility that it may occur with PRDCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out. In PRDCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and, if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PRDCARDIA to be washed out of the body prior to surgery.

**Increased Angina:** Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PRDCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

**Beta Blocker Withdrawal:** Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PRDCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PRDCARDIA initiation. It is important to taper beta blockers if possible rather than stopping them abruptly before beginning PRDCARDIA.

**Congestive Heart Failure:** Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PRDCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event.

**PRECAUTIONS:** **General: Hypotension:** Because PRDCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PRDCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

**Peripheral edema:** Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PRDCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

**Drug Interactions:** Beta-adrenergic blocking agents. (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PRDCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates. PRDCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianginal effectiveness of this combination.

Digitalis. Administration of PRDCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PRDCARDIA to avoid possible over- or under-digitalization.

Carcinogenesis, mutagenesis, impairment of fertility. When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

Pregnancy. Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in mice and rabbits, and abnormalities in monkeys.

**ADVERSE REACTIONS:** The most common adverse effects include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients; transient hypotension in about 5%; palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PRDCARDIA or concomitant antianginal medication. Additionally, the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PRDCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

**Laboratory Tests:** Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LDH, SGOT and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PRDCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PRDCARDIA therapy has been reported twice in the extensive world literature.

**HOW SUPPLIED:** Each orange, soft gelatin PRDCARDIA CAPSULE contains 10 mg of nifedipine. PRDCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72) and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77° F (15° to 25° C) in the manufacturer's original container.

More detailed professional information available on request

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*While this patient's experience  
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# News About Colleagues

## ABOUT

## IOWA PHYSICIANS



**Dr. Frank D. Edington**, Spencer, recently retired from medical practice. Dr. Edington received the M.D. degree at the U. of I. College of Medicine. He located in Spencer in 1947 after WWII military service. . . . **Dr. Jim Myerly** has become associated with **Drs. E. J. Birkemeyer** and **M. W. Johnson** as part of Diagnostic Radiologic Imaging, P.A., to provide services at the Dickinson County Memorial Hospital in Spirit Lake. Dr. Myerly received the M.D. degree at the University of California School of Medicine in San Diego and completed his radiology residency at the U. of I. College of Medicine. . . . **Dr. J. G. Lavender** has retired from his medical practice in George. Dr. Lavender received the M.D. de-

gree at the University of Nebraska School of Medicine. He has practiced in George since 1947. Dr. and Mrs. Lavender plan to continue living in George . . . **Dr. Arthur Wise**, long-time Iowa City ophthalmologist, recently retired from private practice. Dr. Wise received the M.D. degree at the Loyola University College of Medicine in Chicago and served his ophthalmology residency at the U. of I. College of Medicine. He located in Iowa City in 1943. . . . **Dr. James McKlveen**, Ames, served as an oral examiner for the American Board of Anesthesiologists at a recent meeting in Albuquerque, New Mexico. Dr. McKlveen is president of the Iowa Society of Anesthesiologists.

(Continued on page 124)

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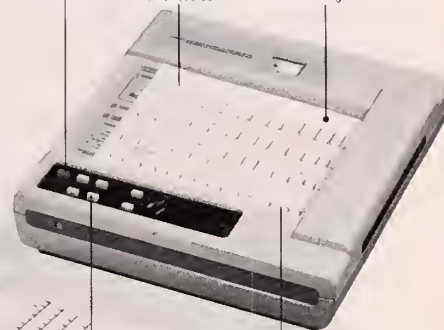
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Dr. Gary Fanning, Ames, was a program participant at the annual meeting of the American Society of Anesthesiologists. . . . Dr. Edwin D. Kennedy, Mason City, recently was elected president, North Central Section, American Urology Association. The section covers 11 states and 2 Canadian provinces.

Dr. James A. Snyder has joined Drs. Robert E. Hedican, Jr., Stephen L. Bloom and Paul D. Pettit to practice obstetrics and gynecology in Waterloo. Dr. Snyder received the M.D. degree at Creighton University School of Medicine in Omaha and served his residency at the Mayo Clinic. Dr. Snyder is a fellow of the American College of Obstetricians and Gynecologists and a diplomate of the American Board of Obstetrics and Gynecology. . . . Dr. John B. Dixon has been named president of the medical staff at the North Iowa Medical Center in Mason City. Other officers are — Dr. Darrell E. Fisher, president-elect and Dr.

Bohdan K. Wasiljew, secretary-treasurer. All are Mason City physicians.

Dr. Fernando Rivera has assumed presidency of the Mercy Hospital medical staff in Council Bluffs. Other elected officers are Dr. Max E. Olsen, Minden, president-elect and Dr. Gary T. Leitch, Council Bluffs, secretary-treasurer. . . . Dr. William Neil will join Humboldt Park Physicians in Humboldt in August. Dr. Neil received the M.D. degree at the U. of I. College of Medicine and is completing a family practice residency in Lansing, Michigan. . . . Dr. Paul Knouf, Rockwell City, has been re-elected president of the medical staff at Stewart Memorial Community Hospital in Lake City. Dr. Linda Iler was re-elected vice president and Dr. Donald L. Skinner, secretary. Dr. Iler and Dr. Skinner are Lake City physicians. . . . Dr. Ted A. Harris has begun medical practice in Cedar Rapids. Dr. Harris received the M.D. degree at the U. of I. College of Medicine and served an internship and residency in obstetrics and gynecology at the University of Virginia Hospital in Charlottesville, Va. Dr. Harris has been in private practice in Woodstock, Vir-

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ginia. . . . **Dr. Krishna A. Birusingh** recently assumed the presidency of the Pottawattamie-Mills County Medical Society. Other new officers include **Dr. Ted Hoff**, president-elect; **Dr. Barry Kricsfeld**, vice president; and **Dr. Philip Meyer**, secretary-treasurer. All are Council Bluffs physicians. . . . **Dr. Leland G. Hawkins** recently became president of the Mercy Hospital medical staff in Cedar Rapids. Other elected officers are — **Dr. William B. Galbraith**, vice president and president-elect and **Dr. Whealen Koontz**, secretary-treasurer. All are Cedar Rapids physicians.

Croix Falls, Wisconsin. . . . **Dr. Roger W. Boulden** retired from medical practice in Lenox in January. Dr. Boulden received the M.D. degree and served an internal medicine residency at the University of Nebraska. He began medical practice in Lenox in 1950. . . . **Dr. Douglas B. Dorner** recently was installed as president of the Polk County Medical Society. Other officers elected are **Dr. Harold E. Eklund**, president-elect and **Dr. Jon D. Gibson**, secretary-treasurer. . . . **Dr. A. C. Wubben**, Rock Rapids, retires from medical practice this month. Dr. Wubben received the M.D. degree at Rush College of Medicine in Chicago; interned at Cook County Hospital, and served his surgery residency at Illinois Central Hospital. He began medical practice in Rock Rapids in 1938. . . . **Dr. Willis K. Dankle**, Clear Lake, recently was elected president of the medical staff at St. Joseph's Mercy Hospital in Mason City. Other medical staff officers are **Dr. Amado G. Chanco**, vice president, and **Dr. David L. Little**, secretary-treasurer. Dr. Chanco and Dr. Little are Mason City physicians.

**Dr. Thomas W. Miller** recently was named assistant director of the family practice residency program at St. Joseph's Mercy Hospital in Mason City. Dr. Miller received the M.D. degree at the U. of I. College of Medicine. He had a family practice residency at County General Hospital in Ventura, California. He has been in private practice at St. Croix Falls Clinic in St.



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**Dr. Thomas Duncan** will join Medical Associates in Mason City in July. Dr. Duncan received the M.D. degree at Creighton University School of Medicine and is completing his family practice residency at St. Joseph's Mercy Hospital in Mason City.

## DEATHS

**Dr. Dwight C. Wirtz**, 81, Des Moines, died January 12 at Mercy Hospital Medical Center in Des Moines. Dr. Wirtz received the M.D. degree and served his orthopedic residency at the U. of I. College of Medicine. In 1942 he helped organize the first midwest polio treatment center using the Sister Kenny method. Dr. Wirtz was a World War II veteran, past president of the Polk County Medical Society and life member of the Iowa Medical Society.

**Dr. Floyd M. Burgeson**, 75, West Des Moines, died January 14 at Mercy Hospital Medical Center. Dr. Burgeson received the M.D. degree at the U. of I. College of Medicine. During World War II, he was a prisoner of war from 1943 to 1945. After the war, he remained in the National Guard and retired in 1969 as a brigadier general. Dr. Burgeson was a past president of the Polk County Medical Society; chief of staff at Iowa Lutheran Hospital in 1948 and chief of staff at Broadlawns Medical Center from 1954 to 1956. He served as president of the Des Moines School Board and was a Republican candidate for the Fifth Congressional District in 1960.

**Dr. Edward R. Gann**, 66, Sigourney, died November 10 at University Hospitals in Iowa City. Dr. Gann received the M.D. degree at the U. of I. College of Medicine. Prior to locating in Sigourney, he was on the staff of Veterans Hospital in Des Moines and the Oakdale Tuberculosis Sanitarium near Iowa City.

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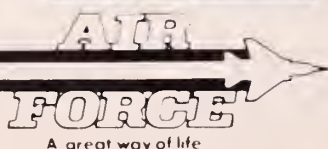
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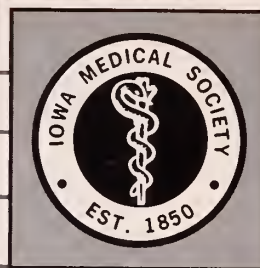
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A Monthly Commentary

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## IN THE PUBLIC INTEREST

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### Emphasis on Education

**A**CTIVITIES of the Iowa Medical Society go in many directions. Naturally, these activities are directed at producing or supplying useful information. The ultimate goal, quite obviously, is to furnish facts and figures that will help Iowa physicians (and others) know more and serve better.

Here is what's on the IMS calendar in the time just ahead:

- **Conference on the Prevention and Care of Sports Injuries** — Thursday, March 29, at the Olmsted Center, Drake University, Des Moines.

- **1984 Iowa Medical Society Scientific Session** — Monday/Tuesday/Wednesday, April 2, 3 and 4, The Highlander Inn/University Hospitals, Iowa City.

- **Practice Management Workshops** — Wednesday/Thursday, April 11 and 12, IMS Headquarters, West Des Moines.

First up is the *Conference on the Prevention and Care of Sports Injuries*. This is a popular educational event for Iowa coaches, trainers and team physicians. It is a joint project of the IMS, the Iowa High School Athletic Association, the Drake University Athletic Department and the Iowa Methodist Medical Center. The 1984 program has a lineup of excellent speakers that includes the Minnesota Viking team physician and a Texas physician who helped author a new book called: *Sports Medicine: Health Care for Young Athletes*.

The Society's major continuing medical education event in 1984 is April 2, 3 and 4 in Iowa City. The *IMS Scientific Session* is a fast-paced and diversified informational update on topics of current and broad interest. What subjects are on the program? Here are examples:

*Anorexia and Bulimia* . . . these vexing eating disorders hit predominantly young women. The physiological and endocrinological abnormalities are usually reversible if diagnosed and

treated early enough. Covering the topic will be Katherine Halmi, M.D., Director of the Eating Disorder Program, The New York Hospital-Cornell Medical Center.

*AIDS* . . . the epidemiology and clinical features of Acquired Immune Deficiency Syndrome will be reviewed by John Phair, M.D., Chief, Infection Disease Section/Department of Medicine, Northwestern University, and Laverne Wintermeyer, M.D., Director of Infectious Disease Control, Iowa State Department of Health.

*Informed Consent* . . . the legal and ethical responsibilities here are complex and deserve ongoing evaluation; they need to be understood by Iowa physicians. An updating will be furnished by Iowa City Attorney William Tucker.

*Chronic Pelvic Pain* . . . the management of this diagnosis in reproductive age women will be covered by Susan Johnson, M.D., Assistant Professor of Obstetrics and Gynecology, University of Iowa.

These are but several highlights from the upcoming IMS Scientific Session. It is a continuing medical education event worthy of participation by many Iowa physicians.

Last of the three events mentioned is actually a doubleheader. This event concerns practice management — how to do a better job. The first-day workshop (April 11) will cover basic computer operation. The second-day workshop (April 12) is titled, *Managing the Business Side of Medicine*. Both are for physicians and their key supervisory personnel. They are presented in cooperation with the American Medical Association.

The times, they are busy! The purpose, it is laudable!

March 1984

Iowa Medicine

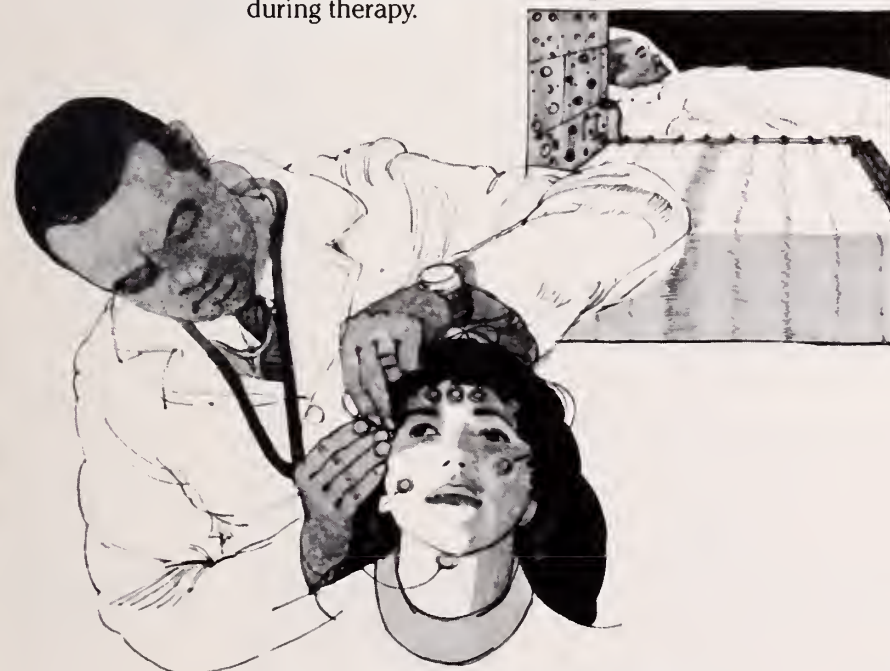


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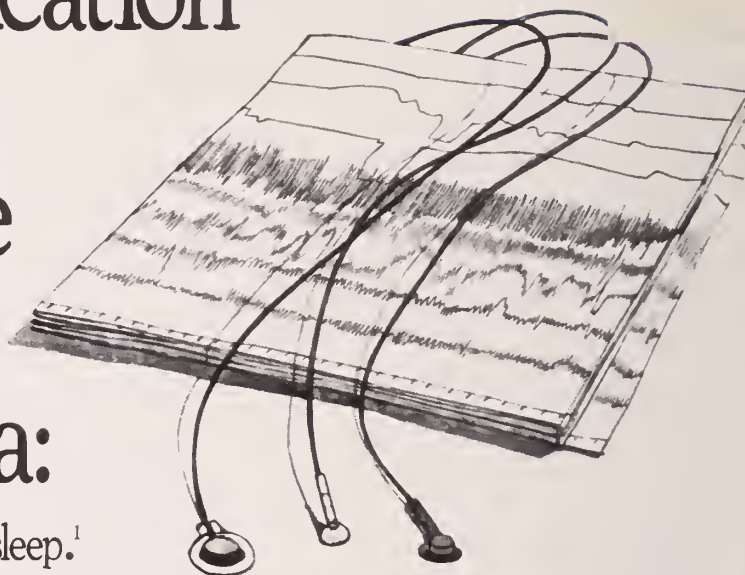
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April 1984

# IowaMedicine

Journal of the Iowa Medical Society

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# Iowa Medicine

April 1984

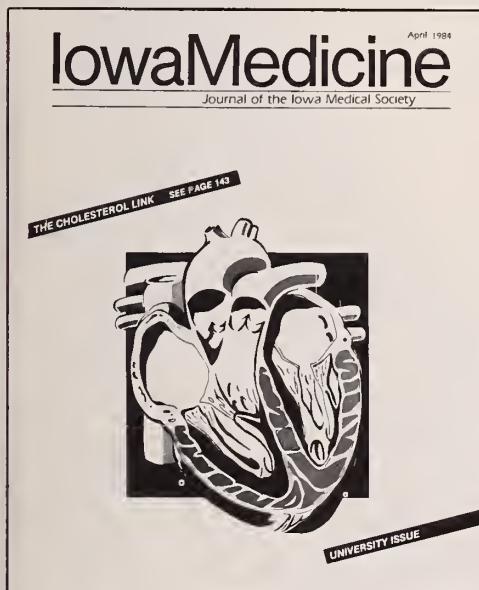
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## ABOUT THE COVER



This month's cover illustration underscores the significance of coronary heart disease in our population and calls attention to the Iowa role in an international Coronary Primary Prevention Trial. The participation of 400 Iowa men over a 10-year period is described in a paper by Helmut G. Schrott, M.D., beginning at Page 143. The discussion by Dr. Schrott is one of several editorial highlights in our April University Issue.

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## PRESIDENT'S PRIVILEGE



**A**BOUT HALF of us who practice medicine in Iowa are products of the University of Iowa. And we whose careers are approaching senior status have an association with the University that spans several decades. My personal ties cover 30-plus years — and include a recent and rewarding 10-year leadership involvement with the University of Iowa Foundation.

I comment here about our typically strong allegiance to the University for an obvious reason. We traditionally allocate the April issue of *IOWA MEDICINE* to showcasing our nationally prominent base for medical education. We invite you to read the comments of Dr. Eckstein, Dr. Seebohm, Dr. Aschenbrener and others. They testify to our mutual desire (of IMS and College of Medicine leaders) to sustain a long and positive relationship.

Last month it was my privilege to speak to 100 or more University of Iowa medical students. It was a rewarding time for me; I hope it was for them. The topic, appropriately, was *Competition in Medicine: A Challenge in Your Future*.

In summary, this was the thrust of my remarks: *Positive competition is worthwhile. Maybe the Iowa public will benefit from more of it. But to see it become excessive — overly embroiled in economics — is distressing. We — myself right now, and you in the future — must retain our professional mantle. We need to be sure that, as a profession, whether we're dealing with government regulations, hospital pressures, or anything else, we work together for total patient welfare. If we compete with one another fairly, ethically, and honestly, okay. As individual physicians, we must be ever mindful that quality patient care is our first order.*

I hope you agree with these comments made to our young colleagues in training.

A handwritten signature in dark ink that reads "Erling Larson MD". The signature is fluid and cursive, with a large, stylized "E" and "L".

Erling Larson, M.D.  
President

**As The Dean Sees It**

## A Matter of Pride

JOHN W. ECKSTEIN, M.D.

Iowa City, Iowa

---

*Ranging from its major role in a nationwide cholesterol study, through genetic engineering to arrest a devastating tropical disease, to an important new textbook by a key faculty figure, Dean Eckstein identifies a double-handful of reasons for Iowa's practicing profession to be proud of its medical college.*

---

AS I SAT ONE GRAY JANUARY MORNING with some 300 middle-aged male Iowans, their wives, and a handful of researchers and clinic staff members to hear the results of the national Coronary Primary Prevention Trial (described by Dr. Schrott on page 143 and pictured on the cover of this issue), I found myself wishing every other Iowan could share in the event.

Quite apart from the scientific benchmark it represented, the successful completion of the 10-year study epitomized the almost legendary cooperation — among patients, their physicians, and College of Medicine faculty — that has built Iowa's impressive reputation for both the quality of its medical care and the quality of its research.

Here were several hundred men who had persisted in stirring 6 packets of sand-like crystals into 6 glasses of juice, and drinking them down — day after day for 10 long years — without knowing whether they were ingesting

the experimental cholestyramine or simply a placebo. Here were the wives who had encouraged, prodded, reworked favorite recipes, and monitored their husbands' efforts for more than 3,500 days. Here were the study's scientific directors and their clinic staff, whose members weighed, measured, counted and cajoled when their subjects came back to the campus periodically for checkups and progress reports. And back in their practices in 127 Iowa cities and towns were the 238 family physicians who had referred their patients and continually encouraged their participation in the study.

As I sat in the auditorium, feeling a glow of pride at being connected with this remarkable effort, I was struck by the thought that the College of Medicine and its supporters could take similar measures of pride in a variety of other achievements and endeavors which will change or otherwise affect how medicine is practiced in the future. For instance:

- The recent discovery of a protein — hepatic stimulator substance — by Dr. Douglas LaBrecque and colleagues, Department of Internal Medicine, already has produced promising results in liver cell regeneration. This could lead to specific therapies for disease states in which liver cell regeneration is inadequate, and also may prove useful in liver cancer patients. This discovery may have even broader implications, as knowledge gained of mechanisms involved in controlling normal growth could also provide valuable insights into the abnormalities that result in malignant growth.

- There should be cause for great pride,



also, in the fact that Iowa's behavioral neurology division now is recognized as 1 of 3 major U.S. centers for behavioral neurology research. This recognition was extended in what has come to seem like the best possible form — a \$1.2 million program project grant from the National Institutes of Health. For the next 3 years, this award will help support brain function research by Drs. Antonio and Hanna Damasio and 30 colleagues in the Department of Neurology and 10 other departments in the Colleges of Medicine and Liberal Arts. The findings of this research are expected to have immediate applications in the diagnosis and treatment of Alzheimer's disease and brain damage resulting from stroke, brain tumor or head injury. It is one of several current grants to help Iowa researchers better understand such brain functions as memory, language, and vision — but the program project grant is one of which I am especially proud, for it affirms the College of Medicine's high national standing in this field.

- Identification by Dr. John Donelson, Department of Biochemistry, of the changing character of the surface antigens of the parasitic organism that causes trypanosomiasis. This disease is manifested in a "sleeping sickness" that affects 200 million Africans and countless animals, and keeps 20 African nations from attaining economic self-sufficiency. With partial funding from Dr. Donelson's \$200,000 award as a 1983 Burroughs-Wellcome Scholar, Iowa researchers are using "genetic engineering" techniques as they work toward a vaccine that would arrest the disease when a potential victim is bitten by the tsetse fly. Dr. Donelson's accomplishment is, indeed, a dramatic demonstration of the value of basic research in medicine.

- The selection of the College of Medicine as 1 of 3 in the U.S. — the others are Johns Hopkins and Columbia — to develop a Physician-Scientist Program, aimed at increasing the number of MDs directly involved in basic medical research. Outstanding young physicians will be taught research skills and recruited for the laboratory in this attempt to reverse the dramatic downtrend in clinicians doing fundamental research. Led by Dr. Robert Fellows, Department of Physiology and Biophysics, and Dr. Barry Sherman, Department of Internal Medicine, the program will be supported by a \$1,659,231 grant from the



John W. Eckstein, M.D.

National Institutes of Health. A major factor in choosing Iowa for this new program, we have been told, is our well established and eminently successful Medical Scientist Training Program, in which outstanding medical students may earn both M.D. and Ph.D. degrees to prepare for medical teaching careers. The 2 programs will have complementary and, we expect, synergistic roles in medical education at Iowa.

- A new focus on diabetes, led by Dr. Helmut Schrott, Department of Internal Medicine, and funded in part by a \$350,000 grant from the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases. Iowa will be one of a very few centers in the United States to give special emphasis to adolescents with diabetes. The study is aimed at determining if serious complications of diabetes can be averted by sustaining near normal blood sugar levels.

- The College of Medicine's research efforts in allergy and clinical immunology, led by Dr. Hal Richerson, Department of Internal Medicine, have received important national recognition: designation as an Asthma and Allergic Diseases Center by the National Institute of Allergy and Infectious Diseases. The accompanying \$400,000 3-year federal program project grant will make possible an even greater commitment at the College of Medicine to the clinical dimensions of allergy research. Re-

searchers will study inflammatory mechanisms in the airways of allergic asthmatics, with special attention to cells and mediators involved in late responses to inhaled allergen. These studies are expected to lead to a better understanding of the pathogenesis of asthma and, in turn, to improved treatment.

- A group of 27 clinicians in Internal Medicine, Orthopaedics, Otolaryngology, Pathology, Radiology, Surgery, and Urology has been accorded full membership in the Southeastern Cancer Study Group — a consortium of faculty at 23 major cancer research and treatment centers that fosters a rapid and free flow of information about cancer treatment. Led by Dr. C. Patrick Burns, Department of Internal Medicine, the participation by the College of Medicine in this clinical cancer study group is resulting in rapid availability here of new cancer protocols involving the latest in experimental drugs, experimental radiotherapy, and experimental surgical techniques. Similarly, cancer protocols developed by University of Iowa researchers can be quickly shared, implemented, and evaluated by researchers at the other institutions. Iowa's acceptance to this prestigious group brings to 8 the number of important national cancer study groups in which our faculty have major roles. Through shared management of their patients with faculty specialists in several of these groups, many Iowa physicians both contribute to and benefit from the development of new treatment protocols.

- The publication a few weeks ago of the Third Edition of *TEXTBOOK OF FAMILY PRACTICE* by Dr. Robert Rakel, Department of Family Practice, underscores the wide acceptance of this Iowa-based text as the international standard in primary medical care; there now are some 30,000 copies in print. While writing this review, I received my copy of the new 36th edition of *CONN'S CURRENT THERAPY*, edited by Dr. Rakel. And the 1984 edition of *THE YEARBOOK OF FAMILY PRACTICE*, which Dr. Rakel has edited since 1977, will be published next month. It is worth noting that practicing physicians in Iowa have had an especially valuable role in the evolution of all 3 books. Informally and formally, in settings ranging from telephone consultations about a patient to county medical society meetings to Continuing Medical Education seminars, Iowa's physicians have offered many

valuable suggestions about how these books could be even more useful in their practices — suggestions that Dr. Rakel has incorporated in these new editions.

- New strengths developed in several areas of the College of Medicine this year with the appointments of Dr. John Tinker to head Anesthesiology, Dr. Michael Conn to head Pharmacology, Dr. Charles Phelps to head Ophthalmology, and Dr. Carol Aschenbrener as Associate Dean for Student Affairs. Dr. Tinker was recruited from the Mayo Clinic, Dr. Conn from Duke University, Dr. Phelps and Dr. Aschenbrener from our own Departments of Ophthalmology and Pathology, respectively.

These are but a few College of Medicine accomplishments during the past year or currently getting under way. They serve to illustrate the many fronts on which Iowa medical faculty members pursue new knowledge which can be used by their colleagues in practice — and which continue to make medicine the fascinating, ever-evolving profession we know it to be.

But even as I complete this hasty review, I find myself hoping that it hasn't set the College of Medicine up for the Biblical reminder, "Pride goeth before a fall." For as I write, there is real reason for concern that the momentum of such accomplishments cannot be sustained at the College of Medicine.

**T**HE GLOOMY STATE revenue outlook has already blasted our hope for the modest infusion of additional state support the Regents have been seeking for the College of Medicine these past 2 years. Budget cutbacks of last year were repeated this year and will be repeated next year. And "outside" support for research is increasingly difficult to obtain.

Such factors must inevitably curtail scientific enterprise and innovation, even among a faculty whose track record is as strong as ours.

The danger is not the immediate loss of scientific productivity — the danger lies 2 or 5 or 10 years from now. The strongest medical education is imparted by those who are active participants in the advancement of knowledge in their fields. A medical faculty whose research is stagnating will become less and less effective in transmitting to its students the latest in scientific knowledge. The profession will be the initial loser — but the ultimate loser will be the health care-seeking public.



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Proof that there really is no substitute for good health.



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---

# Findings Disclosed

*The University of Iowa was one of 12 sites in January at which findings of the national Coronary Primary Prevention Trial were announced. About 400 persons attended the Iowa City briefing — including participants in the program, U. of I. officials and media representatives.*

**BRIEFING SCENES** — Below are University of Iowa medical faculty investigators Francois M. Abboud, M.D., left, and Helmut G. Schrott, M.D. Upper right photo shows other University officials; clockwise from upper left are U. of I. President James O. Freedman, Medical College Dean John W. Eckstein, M.D., and Vice Presidents Richard Remington and D. C. Spriestersbach. Lower right picture has Cedar Rapids Reporter Sandy Reisgraf of KGAN-TV interviewing CPPT participant Miles Samby of Marion.





# Coronary Prevention Study Yields Proof of Cholesterol Link

HELMUT G. SCHROTT, M.D.

Iowa City, Iowa

---

**Nearly 4,000 men took part over a 10-year period in an international effort to learn the effect of lowered blood cholesterol on coronary disease. Iowa researchers, their subjects and their subjects' own physicians, played a major role in the project.**

---

CORONARY HEART DISEASE is a major health problem in the United States. Each year 550,000 deaths, or 1 each minute, occur as a result of coronary atherosclerosis. There are 680,000 hospitalizations for myocardial infarctions yearly, with direct health care costs of approximately 8 billion dollars. The total economic burden to the nation is estimated to be approximately 60 billion dollars.

Motivated at least in part by such awesome statistics, nearly 400 Iowa men recently completed 10 years of helping medical science determine whether such numbers can be reduced, through their participation in the international Coronary Primary Prevention Trial (LRC-CPPT).

Elevated cholesterol levels have been linked to increased coronary heart disease by many research studies. However, evidence that the

lowering of plasma cholesterol leads to a reduction in coronary disease has been inconclusive — largely because of the complexities of acquiring such proof. The essential features of a trial of cholesterol-lowering include the randomization of hypercholesterolemic participants into control and treatment groups, the use of a "double-blind" design — with neither the subjects nor the researchers knowing whether an individual was in the treatment group or the control group — large numbers of participants, many years of follow-up, and high adherence to a study regimen over a long period of time.

The LRC-CPPT involved 3,806 men aged 35 to 59 years who had blood cholesterol levels above 265 mg/dl. The study at 12 Lipid Research Clinics located at major medical centers<sup>1</sup> was funded by the National Heart, Lung and Blood Institute. No participant had clinical evidence of coronary heart disease at entry. The trial was designed to determine whether lowering blood cholesterol would prevent the occurrence of a first myocardial infarction — thus, a "primary prevention trial."

Study participants were randomized to 1 of 2 regimens: diet and placebo, or diet and cholestyramine, a potent LDL-cholesterol lowering agent which is non-absorbable and acts in the gastrointestinal tract. Each participant took 24 grams per day of a powder mixed with a liquid. Recruitment for the trial began in 1973 and ended in 1976; follow-up of the men in the trial ended in September, 1983. The primary endpoint for those who participated in the study was death due to definite coronary heart disease or a nonfatal myocardial infarction.

---

Dr. Schrott is an associate professor of Preventive Medicine and Internal Medicine, and Co-Director, Lipid Research Clinic at the U. of I. College of Medicine

## BASELINE CHARACTERISTICS

	Placebo (n = 1900)	Cholestyramine (n = 1906)
Total blood cholesterol (mg/dl)	291.8	291.5
LDL cholesterol (mg/dl)	218.9	218.6
HDL cholesterol (mg/dl)	43.9	44.0
Current cigarette smokers (%)	36.8	38.6
Blood pressure	120/78	120/78
Age	47.9	47.6

Figure 1

In Iowa, about 44,000 age-eligible men were screened for plasma cholesterol. Screening was conducted at LRC centers in Des Moines, Davenport, Cedar Rapids, Dubuque, Iowa City, Burlington, Clinton, Muscatine, Marshalltown, Oskaloosa, and in many smaller communities. Participation by Iowa men was exemplary, with more than 1,500 coming in to learn about the program and 372 ultimately enrolled for study — the second largest num-

same with respect to the 3 most important coronary risk factors. This was achieved. The groups were virtually identical with respect to total cholesterol, low-density lipoprotein (LDL)-cholesterol, high density lipoprotein (HDL)-cholesterol, cigarette smoking, blood pressure, and average age (Figure 1).

In each group, 23% of the subjects had a family history of heart disease, 95% were Caucasian, 92% were married, and 37% were college graduates. Both groups reported comparable levels of physical activity. Body weight was comparable in both groups. Dietary intake of calories, amount of cholesterol and other fats, and alcohol were all identical in the 2 groups.

Numbers such as these reflect the magnitude of the study: the 3,806 men made 193,000 clinic visits, generated over a million data forms, gave 341,000 blood samples, and had 72,000 electrocardiograms.

Study participants were required to fast for 12 hours prior to having their blood drawn during each visit, to take a daily medication even though they felt no need for any medication, and to remain uninformed of their blood cholesterol levels. They were asked to report all endpoints, illnesses or hospitalizations. Finally, they were asked to maintain the same diet for the duration of the study. Families and personal physicians actively cooperated in helping the subjects maintain adherence to the protocol. No participant had to be unblinded during the course of the study. At the end of the trial, the clinics were able to contact all the subjects in the study. No other study has accomplished such complete follow-up. The debt all of us owe for the dedication of this study's participants, their families, and their physicians is, indeed, very great.

The reductions observed in both total and LDL cholesterol levels in the 2 treatment groups during the study are shown in Figure 2.

During the initial baseline level and time zero, both groups experienced a 3.5% fall in total cholesterol and a 4.0% fall in LDL-cholesterol. At Year One, after introduction of drug therapy, an additional fall of 14% in total cholesterol and 21% in LDL-cholesterol was observed in the cholestyramine group. Although the gap between cholestyramine and placebo groups narrowed somewhat as the study continued, the differences remained significant. The average difference between the

## CHOLESTEROL LOWERING

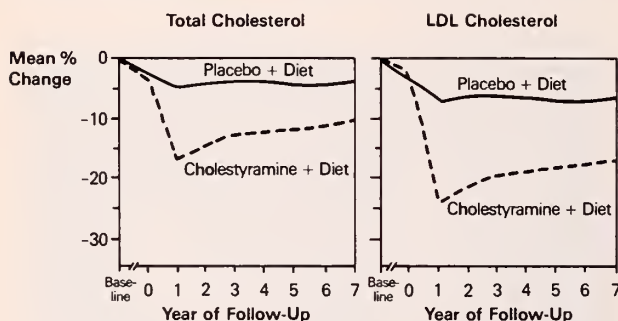


Figure 2

ber of participants among the 12 clinics. Men traveled from all parts of Iowa, western Wisconsin and western Illinois to participate in the program at 2-month intervals, averaging 170 miles per round trip. This degree of commitment was also evident in many other ways, such as adherence to medication taking, in which Iowa's participants ranked among the best in the nation.

In the trial, it was most important that the placebo and cholestyramine groups be the



cholestyramine and placebo group was 8.5% in total cholesterol and 12.6% in LDL-cholesterol. The narrowing between the 2 groups could be attributed to several factors, including less-than-optimum adherence to therapy.

Even with these somewhat modest differences in cholesterol levels, there was a significant difference in the primary endpoints of the study (Figure 3).

The placebo group experienced 187 events, whereas the cholestyramine group experienced 155 events, resulting in a significant 19% reduction in risk.

Each coronary heart disease category with a large number of events showed a reduction in incidence in the cholestyramine group (Figure 4).

The difference in the development of a new positive exercise test was 25%, the difference in angina was 20%, and the difference in coronary bypass surgery was 21%. This consistency in the reduction of coronary heart disease manifestations observed with cholestyramine leaves little doubt of the benefit of the drug therapy.

Although the incidence of death due to "definite" and "'definite' plus 'suspected'" coronary heart disease was reduced by 24% and 30% respectively in the cholestyramine group, the incidence of "all-causes" mortality was reduced by only 7%. Differences in almost every category, under causes other than coronary heart disease deaths, were negligible or nonexistent. Deaths due to malignant neoplasms were about the same in both groups: 15 in the placebo group and 16 in the cholestyramine group.

The benefit of lowered coronary heart disease incidence was achieved without evidence of drug toxicity. Gastrointestinal side effects were more prominent in the cholestyramine-treated participants in the first year than in the placebo group. Most responded to symptom-specific therapy. The diagnosis of gallstones was made with equal frequency in the 2 treatment groups during the study.

The LRC-CPPT findings show to what extent coronary heart disease can be reduced with cholestyramine treatment of individuals who have high cholesterol. For those participants who obtained a 25% fall in plasma cholesterol, a typical response to 24 grams of cholestyramine daily, the coronary heart disease risk was cut in half. As a rough rule of

#### PRIMARY ENDPOINT (DEFINITE CORONARY HEART DISEASE DEATH AND/OR NONFATAL MYOCARDIAL INFARCTION)

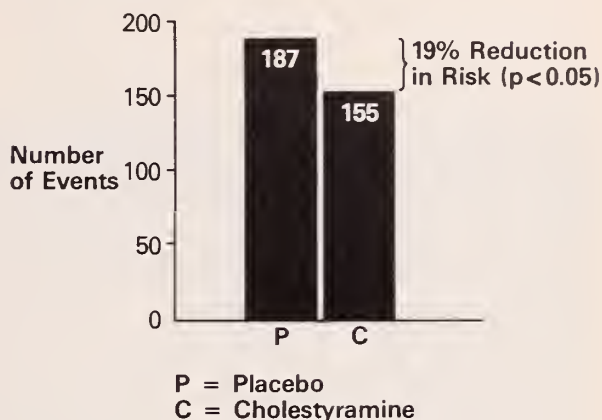


Figure 3

thumb, each 1% fall in cholesterol was associated with a 2% reduction in the rate of heart attack.

The primary interpretation would apply its findings of this program to the 2 million middle-aged American men with cholesterol levels

#### OTHER CORONARY HEART DISEASE ENDPOINTS

	Placebo No.	Cholestyramine No.	Reduction in Risk
Positive exercise ECG	345	260	25%
Angina	287	235	20%
Coronary bypass surgery	112	93	21%

Figure 4

above 265 mg/dl. It is estimated that 100,000 coronary deaths could be prevented annually if blood cholesterol levels in this larger population were reduced to the extent experienced by the men in the cholestyramine group. It also seems logical to extend the findings to younger men with high blood cholesterol levels, as this would allow intervention at an earlier stage in the development of the underlying atherosclerotic process, and would likely be of even greater benefit.

(Please turn to page 146)

Women with high blood cholesterol levels are also at increased risk for coronary heart disease and they, too, could benefit from cholesterol reduction. Finally, persons with more modest elevations, e.g., those with levels in the top 20% of the cholesterol distribution (greater than 240 mg/dl in middle-aged men), might also be candidates for cholesterol reduction.

The results of this study suggest that diet should be used first to reduce cholesterol in individuals in whom it is high. The LRC-CPPT findings cannot presently be extended to

cholesterol-lowering drugs other than bile acid sequestrants. The mode of action, cholesterol-lowering potency, and possible toxicity of other drugs must be taken into account before their use is advocated for the prevention of coronary heart disease.

#### REFERENCE

1. Lipid Research Clinics were funded by the National Heart, Lung and Blood Institute at The University of Iowa, Baylor College of Medicine, University of Cincinnati, George Washington Medical Center, Johns Hopkins University, University of Minnesota, Oklahoma Medical Research Foundation, Stanford University, University of California at San Diego, University of Washington, Universities of Toronto and McMaster, and Washington University (St. Louis).

## 1984 IMS HOUSE OF DELEGATES

With 19 resolutions in hand as this is prepared, the upcoming session of the 1984 Iowa Medical Society House of Delegates promises to be a busy and important two days. The 241-physician-member House will conduct its policy deliberations Saturday and Sunday, May 5

and 6, at the Des Moines Marriott Hotel.

A new program this year in conjunction with the House of Delegates will be an IMS Hospital Medical Staff Forum. It will be Friday, May 4, from 2 to 5:30 p.m., also at the Marriott Hotel. Special invitations have been sent to the chiefs of staffs of all Iowa hospitals. The educational program is open to all delegates, county medical society officers and interested physicians.

Among the important topics set for consideration by the House of Delegates is that of professional liability coverage. It is expected that a new and innovative proposal will be recommended to the House by the IMS Medico-Legal Committee. This proposal to succeed the IMS/Aetna Liability Insurance Program will be laid out for the physician delegates to endorse or decline.

Other subjects coming forward in resolution form cover a wide spectrum, including the voluntary physicians' fee freeze, PRO delegation, medical manpower, medical malpractice, second opinions, alcohol related topics, etc.

John E. Tyrrell, M.D., Manchester, will be installed as the new Society president May 6. The election of 1984-85 officers will occur that day as well.

Representing the American Medical Association at the 1984 House of Delegates will be James E. Davis, M.D., Durham, North Carolina. Dr. Davis is vice speaker of the AMA House of Delegates.



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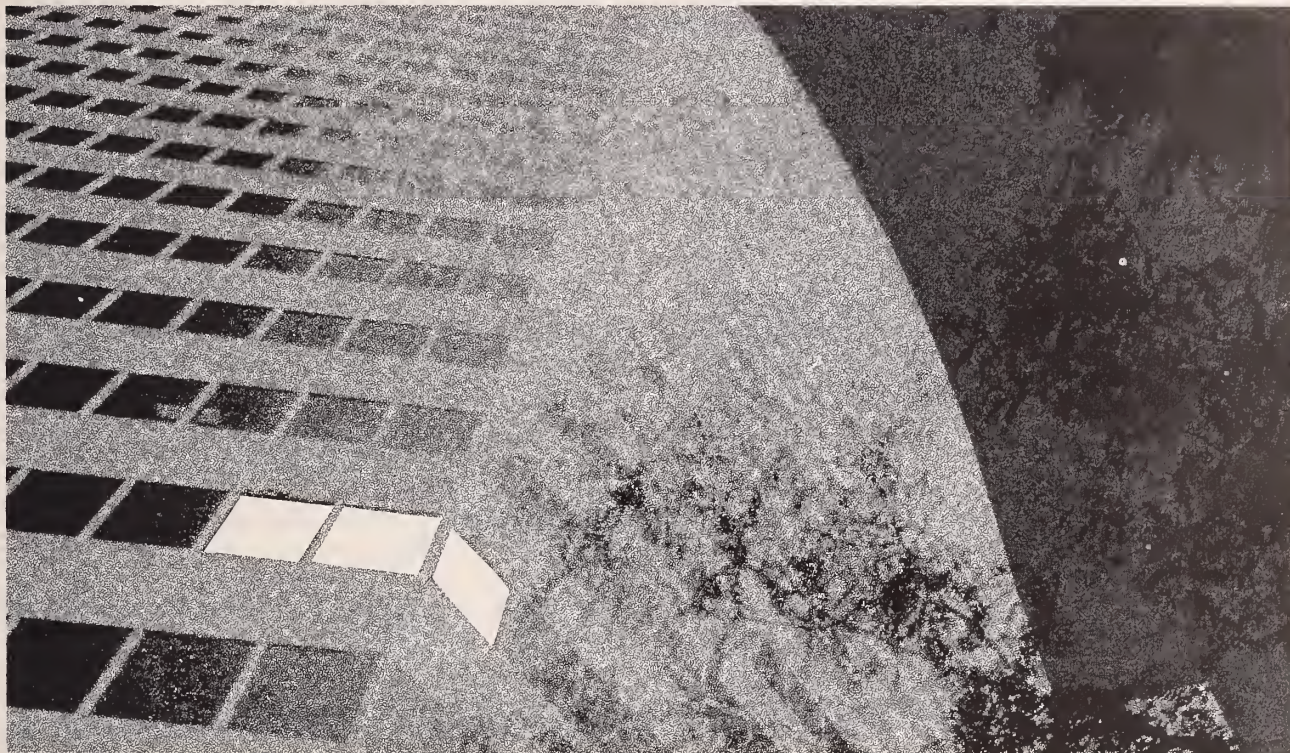
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## Questions and Answers

# Too Many Doctors For Iowa?

PAUL M. SEEBOHM, M.D.

Iowa City, Iowa

ONE OF THE provocative topics today is medical manpower. It is a subject of high interest to physicians in Iowa and all across the nation.

Does Iowa have too many doctors? Will there be a "geographic diffusion of physicians" to rural Iowa? Are Iowa residency programs over-producing? Will supply exceed need in the next decade? Should we cut back our educational programs?

Our regular *Questions and Answers* feature is expanded this month so Paul M. Seebohm, M.D., executive associate dean, University of Iowa College of Medicine, can comment briefly on these questions.

These thoughts from Dr. Seebohm are appropriate for this April *University Issue*. The editors appreciate the opportunity to present his observations on this important topic.

TABLE 1  
POPULATION PER PHYSICIAN RATIOS  
Iowa SMSA and Non-SMSA Regions  
September 1983

SMSA Counties	Population	Physicians	Ratio
Johnson	81,717	475	172/1
Polk/Warren	338,048	661	511/1
Woodbury	100,884	163	619/1
Dubuque	93,745	148	633/1
Black Hawk	137,961	190	726/1
Scott	160,022	195	821/1
Linn	169,775	202	840/1
Pottawattamie	86,500	82	1,055/1
Total SMSA	1,168,652	2,116	552/1
Total Non-SMSA	1,744,735	1,390	1,255/1
Grand Total	2,913,387	3,506	831/1

---

FIFTEEN YEARS AGO THE PUBLIC CONCERN IN IOWA AND ELSEWHERE WAS THE PHYSICIAN SHORTAGE CRISIS. TODAY THE SAME VOICES ARE HEARD EXPRESSING CONCERN THAT WE MAY HAVE A PHYSICIAN GLUT. DOES IOWA HAVE TOO MANY DOCTORS? YES OR NO?

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It's not that simple. Some parts of Iowa were short of physicians 15 years ago and still are today. Other areas had an adequate number of physicians in the late 1960's and still do today. In other words, some parts of Iowa may have enough or even too many physicians, while other parts do not.

Sixty percent of Iowa physicians (2,116) are located in the 9 Standard Metropolitan Statistical Area (SMSA) counties where 40% of the population (1,168,652) reside, while 40% of the physicians are in the 90 rural counties where 60% of the population (1,744,735) is distributed. If one considers just the metropolitan area ratio of population to physician (552/1), Iowa ranks 16th in the country in having enough physicians per population. If on the other hand one considers just the ratio in its rural areas, Iowa ranks 51st in the U.S. When the state is considered as a whole, Iowa ranks 47th, with a 831/1 population to physician ratio — surpassing only South Dakota, Alabama, Arkansas and Mississippi. Thus it is obvious that geographic *maldistribution* of physicians still exists in Iowa.



**IF THE MORE POPULATED AREAS (SMSAs) ACQUIRE ENOUGH PHYSICIANS, WILL THERE BE "GEOGRAPHIC DIFFUSION OF PHYSICIANS" TO RURAL IOWA AS HAS BEEN REPORTED BY THE RAND AND PUBLIC HEALTH SERVICE STUDIES ON MEDICAL MANPOWER DISTRIBUTION?**

We certainly see diffusion of physicians from higher to lower populated communities in Iowa, but the extent is related both to specialty and to community size. Most of the Rand data related to communities of 10,000-15,000 population and above. In Iowa the non-metropolitan communities above 10,000 have attracted a significant number and variety of medical and surgical specialists in the past 10

*(Please turn to page 150)*



Paul M. Seebohm, M.D.

TABLE 2  
POPULATION PER PHYSICIAN RATIOS BY STATE\*  
LOWEST TO HIGHEST POPULATION PER PHYSICIAN RATIOS  
All M.D.s and D.O.s

State	Physicians	Population	Population Per Physician
1. District of Columbia	3,815	637,651	167
2. Maryland	10,533	4,216,446	400
3. Massachusetts	13,512	5,737,037	425
4. New York	40,266	17,557,288	436
5. California	51,904	23,668,562	456
6. Connecticut	6,755	3,107,576	460
7. Hawaii	1,948	965,000	495
8. New Jersey	14,361	7,364,158	513
9. Florida	18,826	9,739,992	517
10. Vermont	990	511,456	517
11. Arizona	5,232	2,717,866	520
12. Rhode Island	1,822	947,154	520
13. Pennsylvania	22,635	11,866,728	524
14. Washington	7,600	4,130,163	543
15. Idaho	1,681	943,935	562
16. Oregon	4,641	2,632,663	567
17. Alaska	699	400,481	573
18. Missouri	8,323	4,917,444	591
19. Delaware	1,008	595,225	591
20. Colorado	4,878	2,888,834	592
21. Michigan	15,468	9,258,344	599
22. Maine	1,869	1,124,660	602
23. Illinois	18,983	11,418,461	602
24. Virginia	8,702	5,346,279	614
25. New Hampshire	1,497	920,610	615
26. New Mexico	2,112	1,299,968	616
27. Nevada	1,296	799,184	617
28. Minnesota	6,541	4,077,148	623
29. Ohio	17,280	10,797,419	625

State	Physicians	Population	Population Per Physician
30. Texas	22,475	14,228,383	633
31. Kansas	3,658	2,363,208	646
32. Utah	2,248	1,461,037	650
33. Wisconsin	6,978	4,705,335	674
34. Oklahoma	4,416	3,025,266	685
35. Tennessee	6,481	4,590,750	708
36. Georgia	7,707	5,464,265	709
37. Louisiana	5,862	4,203,972	717
38. N. Carolina	8,076	5,874,429	727
39. N. Dakota	897	652,695	728
40. Montana	1,075	786,690	732
41. Nebraska	2,117	1,570,006	742
42. West Virginia	2,602	1,949,644	749
43. Wyoming	613	470,816	768
44. Kentucky	4,615	3,661,433	793
45. S. Carolina	3,870	3,119,208	806
46. Indiana	6,717	5,490,179	817
47. Iowa	3,506	2,913,387	831†
48. S. Dakota	818	690,178	844
49. Alabama	4,570	3,890,061	851
50. Arkansas	2,633	2,285,513	869
51. Mississippi	2,753	2,520,638	916
Totals	399,864	226,504,825	567

\* Physician Data Sources: AMA Masterfile Data, 1983; Iowa Physician Figure: Iowa Physician Information System, Office of Community-Based Programs, September 1983.

† Figures do not include residents-in-training.

NOTE: Iowa ranked 45th in 1982. Source: AMA Masterfile, 1982.

years, since the number of such physicians has become more plentiful.

In the 70 or more rural counties with towns of less than 10,000 population, the "diffusion" has been principally related to family physicians, and to a lesser degree general surgeons. About 65% of all family physicians and 46% of all general surgeons in Iowa are located in the non-metropolitan counties. Interestingly, only 22% of the pediatricians and 23% of the internists, the other primary care physicians, are in the non-metropolitan counties. They are, however, well represented in the 10,000-plus population communities.

From these figures one can see that geographic distribution of physicians in a rural state such as Iowa is highly dependent on an appropriate balance in the specialty distribution of the physicians coming out of residency programs, especially with regard to family physicians.

## DO IOWA RESIDENCY PROGRAMS HAVE THAT BALANCE?

Yes, they do. In a typical year there is an even balance between primary care specialists and other specialists entering practice. And in the case of family practice, about 35% of all allopathic-trained residents from Iowa programs entering practice are family physicians. Interesting, too, is the fact that, of all the graduates from the College of Medicine classes of 1970-1979 who remained in or returned to Iowa to practice, 35% are in family practice.

Those physicians entering practice in Iowa who have had all their medical school and residency education outside the state followed much the same specialty and geographic distribution as the Iowa-trained physicians.

TABLE 3  
ENTRY OF IOWA ALLOPATHIC (MEDICAL) GRADUATES\*  
INTO IOWA PRACTICES  
1982

UI Graduating Class Size	Entering Iowa Practices (282)		Total Entry Group	Physicians Leaving Iowa Practices	Net Gain in Iowa Physicians
	Iowa Allopathic Education/Training*	Non-UI Education/ Training (MD + DO)			
175	132	150 (119 + 31)	282	176	106
	Family Practice	37	Family Practice	43	
	Internal Medicine	25	Internal Medicine	27	
	Pediatrics	9	Pediatrics	9	
	Obstetric/Gyn.	2	Obstetric/Gyn.	6	
	Anesthesia	2	Anesthesia	5	
	Dermatology	0	Dermatology	1	
	Emergency Med.	11	Emergency Med.	6	
	General Surgery	9	General Surgery	7	
	Neurology	3	Neurology	3	
	Neurosurgery	0	Neurosurgery	1	
	Ophthalmology	4	Ophthalmology	3	
	Orthopedics	2	Orthopedics	6	
	Otolaryngology	3	Otolaryngology	2	
	Pathology	4	Pathology	6	
	Physical Med.	0	Physical Med.	2	
	Plastic Surgery	1	Plastic Surgery	0	
	Preventive Med.	0	Preventive Med.	1	
	Psychiatry	10	Psychiatry	7	
	Radialogy	7	Radialogy	11	
	Thoracic Surgery	1	Thoracic Surgery	3	
	Urology	2	Urology	1	
	Total	132	Total	150	
Exchange Analysis:					
• Entry of Iowa Allopathic Graduates					132
• Entry of Allopathic Grads./No UI Contact					+ 119
					251
• UI Medical Class of '82					- 175
Exchange Factor					+ 76

\* Physicians who have graduated from the UI College of Medicine, from a residency or fellowship program at University Hospitals and Clinics, from a UI-affiliated residency, or from a combination of these University of Iowa medical education programs.



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**YOU SOUND SATISFIED WITH TRENDS OF PHYSICIAN PLACEMENT IN IOWA, BUT ARE YOU NOT CONCERNED THE SUPPLY MAY EXCEED THE NEED IN THE NEXT DECADE?**

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I think one needs to divide the physician supply issue between the state of Iowa and the U.S. as a whole. I do not think there is any question that the supply of physicians nationally has reached a peak from which it needs to withdraw, and in fact it is already on a projected decline. The federal funding that stimulated enrollment increases has been curtailed, immigration preference for foreign medical graduates has been stopped, and the generally poor economics of medical education has curtailed enrollment in both private and public institutions across the country.

In Iowa the influx of physicians from out of the state has helped the physician census substantially in the past 10 years. About half of the physicians entering practice have had their entire medical education and residency training

outside Iowa's allopathic system. Considering its 47th ranking in the nation, and with a substantial distance still to go in solving the rural distribution problem, Iowa obviously does not have an acute surplus of physicians.

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**BUT AREN'T YOU CONCERNED THAT IT WILL BECOME WORSE IN THE NEXT 10 YEARS OR SO? AND REALISTICALLY, SHOULDN'T IOWA BEGIN CUTTING BACK ITS EDUCATIONAL PROGRAMS?**

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The College of Medicine and the residency programs in Iowa produce about 175 physicians each year, which just about equals the number of physicians that leave practice in Iowa each year — about 180. When physician exchanges are considered, Iowa can be said to be meeting the equivalent of its own manpower needs. For the time being, at least, there seems to be no reason to reduce the enrollment in Iowa allopathic education and residency programs, but these should continue to be carefully monitored.

TABLE 4  
UNIVERSITY OF IOWA MEDICAL GRADUATES  
Specialties of Graduates Now in Iowa Practices  
Closes of 1970-1979  
February 1984

Specialty	Frequency
Family Practice	172
Internal Medicine	88
General Medicine	51
Cardiology	8
GI	7
Hematology	1
Oncology	4
Pulmonary Dis.	9
Nephrology	3
Infectious Dis.	3
Rheumatology	1
Endocrinology	1
IM Total	88
Pediatrics	31
Gen. Pediatrics	23
Cardiology	2
Neonatal	2
Endocrinology	1
Allergy/Immuno.	2
Infectious Dis.	1
Peds. Total	31

Specialty	Frequency
Obstetrics/Gynecology	30
Orthopedic Surgery	17
General Surgery	15
Emergency Medicine	15
Radiology	15
Psychiatry	15
Anesthesiology	12
Otolaryngology	12
Pathology	12
Ophthalmology	11
Dermatology	9
Urology	8
Thoracic Surgery	4
Neurology	3
Physical Medicine/Rehab.	2
Colon/Rectal Surgery	1
Neurosurgery	1
Total	473



## 'Great to be a Hawkeye,' Says Ronald McDonald

**P**ARENTS NEEDING to stay in Iowa City while their children receive health care at The University of Iowa Hospitals and Clinics soon will have a new resource for housing and emotional support.

Construction is to begin this month on a 16-bedroom facility to be located near the Carver-Hawkeye Arena within walking distance of University Hospitals. The site is being provided to the Children's Family Living Foundation, Inc., by The University of Iowa through a long-term lease.

The new Ronald McDonald House will be a home-away-from-home with a comfortable family living area. It will enable parents of young patients to share experiences and gain emotional support from each other. The facility will have cooking and laundry equipment.

Each bedroom will have sleeping accommodations for up to four members of a family. Two rooms will be equipped for handicapped guests. Houseparents will live in a second-floor apartment to perform administrative duties.

The project is being undertaken by the Children's Family Living Foundation. This 25-member organization is comprised of parents from across Iowa, along with McDonald Restaurant owners and representatives from University Hospitals clinical and administrative staffs.

The \$1.2 million fund-raising goal had reached \$668,000 as of January. The construction and furnishing of the Ronald McDonald House will cost \$887,000. Regional coordinators are conducting fund-raising activities.

**HOME-AWAY-FROM-HOME** — Above illustration shows what the main entrance to the Iowa City Ronald McDonald House will look like. Groundbreaking is scheduled in April. Upper right photo is an example of many statewide fund-raising events going on; this one raised more than \$4,000 at the Old Capitol shopping mall in Iowa City. Middle left picture shows Iowa Men's Athletic Director Bump Elliott, who serves as honorary chairman of the drive to raise more than \$1 million. Patient parents have spearheaded much of the planning. In the middle right photo are parent members of the Foundation; from left are Charles Betts, Iowa City, Elaine Paul, Iowa City, and D. Michael King, Dubuque. Lower right is another architectural look at the outdoor deck and play area which blend into a wooded knoll near Carver-Hawkeye Arena.









# 'The Chief'— Doctor William Osler

R. PALMER HOWARD, M.D.

Iowa City, Iowa

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*Sir William Osler, the most famous English-speaking physician of the 19th and 20th centuries, had an important influence on medical education at the University of Iowa, says a College of Medicine professor in a new book describing his family ties with Dr. Osler.*

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**W**ILLIAM OSLER (1849-1919) was an outstanding physician in North America and Europe at a time when rapid changes were occurring in the prevention and treatment of specific diseases. He was graduated from the McGill Medical College at Montreal in 1872 and studied abroad for 2 years. Osler taught at McGill until 1884; was Professor of Clinical Medicine at The University of Pennsylvania for 5 years, and then became the first Professor of Medicine at The Johns Hopkins University and Hospital in 1889. After 16 years in this major position in American medicine, he served as

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**THE CHIEF** — Sir William Osler, shown in the left photo, inspired many of his medical pupils and colleagues. The Osler inspiration reached Iowa in a significant way through the presence of Campbell Howard, M.D.

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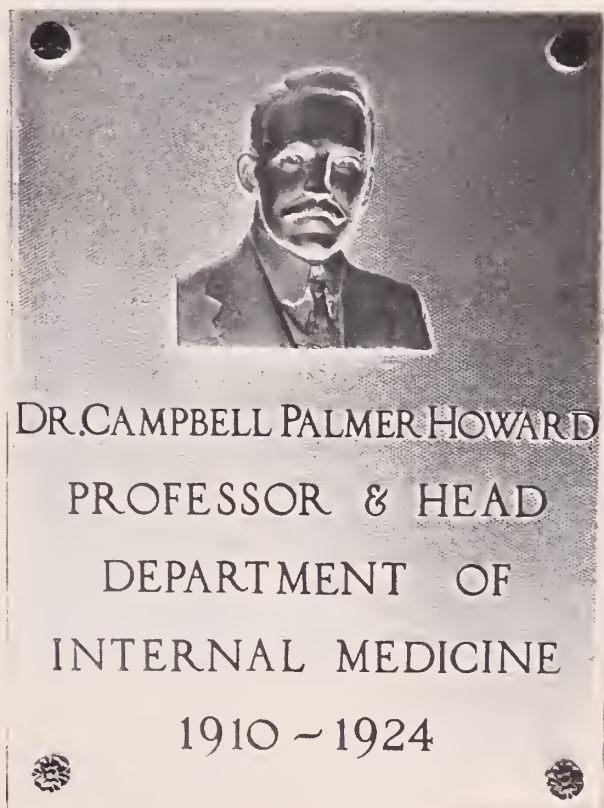
**RECOGNITION PLAQUE** — This plaque recognizes the Iowa service of Campbell P. Howard, M.D., as professor and head, U. of I. Department of Internal Medicine, from 1910 to 1924.

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Dr. Howard is serving as clinical professor of Family Practice at The University of Iowa College of Medicine. In this capacity, he is concentrating his efforts on the medical humanities and is engaged in teaching medical history.

Regius Professor of Medicine at Oxford University from 1905 until his death. Osler was created a baronet in 1911.

The author's heritage is closely linked with Sir William Osler. One grandfather, Henry P. Wright, was a fellow student at McGill Medical College; the other grandfather, R. Palmer Howard, was Osler's Professor of Medicine, and a respected teacher. My father, Campbell P. Howard, headed the Department of Medicine at The University of Iowa from 1910 to 1924.





CAMPBELL P. HOWARD, M.D. — Supported in doing so by Osler, Dr. Howard accepted the Iowa chair of medicine in 1910. The originals of 82 Osler letters to Dr. Campbell have recently been donated to U. of I. Libraries.

My childhood recollections of Sir William and Lady Osler and their son, Revere, in Oxford were frequently reinforced by the reminiscences of my father and mother, Otilie (Wright) Howard and other relatives. Their homes contained many books, portraits and miscellaneous gifts from the Oslers. These influences clearly revealed the high place of William Osler as a physician, author, and especially a leader of men and women through his thoughtful consideration and interest in other persons.

The letters from Osler to the Campbell Howard family form the central resource of this book. The majority of these were received during Dr. Howard's tenure at Iowa. Appropriately, therefore, the originals of 82 autographed Osler letters (1890-1919) have been recently donated to The University of Iowa Libraries.

More than 100 unpublished letters from Osler to others, such as Principal Peterson of McGill University and Marjorie (Howard) Futch, were also reviewed. The official records, correspondence, and other details of The

University of Iowa Medical School at the time of Abraham Flexner's survey in 1909 through Campbell Howard's tenure were studied at the University Archives, Special Collections, University of Iowa Libraries. Important information was also kindly provided by other persons and institutions, in particular, by the staff of McGill University, including its Osler Library.

Osler's name may not be associated with a major scientific discovery. However, his contributions to student and graduate medical education, clinical methodology and practice, and the promotion of preventive medicine and public health have been described and extolled by Harvey Cushing and many of Osler's contemporaries. His textbook, frequently revised, was the popular one used by students at Iowa and other colleges for medical practice, and by English-speaking physicians until the introduction of antibiotics and radio-active agents in medicine during the 1940's. The addresses to students and practitioners on interpersonal relations during professional life — *Aequanimitas* and *A Way of Life*, for example — inspired his contemporaries and continue today to encourage their followers in the healing professions.

Osler's enduring concern for his patients, colleagues and students was a notable aspect of his personality. This concern was probably most thoughtfully directed towards those he trained on the graded residency service which he initiated at The Johns Hopkins Hospital.

The dedication in *The Principles and Practice of Medicine* (1892) honors 3 of his teachers: William Arthur Johnson, James Bovell and Robert Palmer Howard. Osler's interest in children and young people was always evident. Two of the sons of Osler's teachers graduated from the McGill Medical College during his tenure, but James B. Johnson and R. J. B. Howard did not choose careers in internal medicine. Osler became a godfather in 1877, however, of R. P. Howard's second son, Campbell. He was often in the Howard home while residing in Montreal until 1884. After the deaths of the senior Howard in 1889 and his widow in 1892, the bonds between Osler and the young children, Muriel, Campbell and Marjorie, remained close.

Campbell Howard was graduated in medicine from McGill University. He spent the year 1901-1902 as intern at the Montreal General

(Please turn to page 158)



# Osler-Howard Iowa Connection

IOWA AND Dr. William Osler figure prominently in the lives of 3 generations of the Howard family.

In 1909, after studying the Iowa medical college, Dr. Abraham Flexner told state officials the future viability of medical education there hinged on the development of an in-residence clinical faculty with research involvement. A year later, on recommendation of Dr. Osler, the University recruited Campbell Howard, M.D., from McGill University to be Professor of Theory and Practice of Medicine. He became the Iowa University Hospital's Chief Physician. Campbell Howard stayed in close touch with Dr. Osler, who was his mentor, and had a major role in bringing Iowa medical education out of the classroom and into the wards — just as Dr. Osler had done at Johns Hopkins.

The author of this article is the son of Campbell Howard. R. Palmer Howard was born in Iowa City and attended elementary school there. The family moved to Montreal in 1924 when Campbell Howard accepted a call to return to McGill, his alma mater.

R. Palmer Howard later earned a medical degree from McGill, and served an internship and residency at Johns Hopkins. Following World War II duty in the Royal Canadian Army Medical Corps, R. Palmer Howard, M.D. held various academic appointments, including 30 years of teaching and research at the University of Oklahoma.

"The warm feeling we had for Iowa" helped keep alive the family's Iowa connection. Daughter Caroline came to Iowa, studied at Cornell College, earned a bachelor's degree from the U. of I., and settled in the state. During those years, the Howard family frequently visited Iowa, not only to see their daughter and family friends, but to permit Dr. Howard access to U. of I. library archives for his research into the history of medicine.

When Dr. Howard retired from the Oklahoma faculty in 1982 he accepted an invitation from the U. of I. College of Medicine to join its faculty as a clinical professor of family practice.

He now teaches medical history to Iowa's next generation of physicians. He lectures on the importance of the medical humanities and is active in the Iowa History of Medicine Society.

Dr. Howard also spends many hours in the U. of I. libraries' archives — including the John Martin Rare Book Room in the Health Sciences Library, whose treasures include the special collection of 82 Osler-Howard letters dating from 1890 to 1919 that the Howard family donated to the U. of I. about 2 years ago.

*Howard is author of the just-published book The Chief: Doctor William Osler, which is reviewed on page 160 of this issue.*



**AUTHOR OF NEW BOOK** — Now located in Iowa City, R. Palmer Howard, M.D., returns to his early home as a clinical professor of family practice. He will share his knowledge of medical history and humanities with the students.

Hospital. Osler wrote him on August 21, 1901, "I think if you wish it, I could arrange to take you on my service next year (after finishing at the M.G.H.). You would come in as one of the four senior residents. . . . If you think of it as likely, pay special attention to bacteriology this winter with [John] McCrae, your Resident Pathologist. . . ."

**H**OWARD ACCEPTED the offer and served as an assistant resident at the Johns Hopkins Hospital through January, 1906. He then spent an additional year of study in Europe. Osler supervised the training in internal medicine of his own professor's son for five and a half years. Campbell Howard was thus enrolled in the band of pupils who were proud to call Dr. William Osler "The Chief." A major purpose of this book is to bring out the conscientious manner in which Osler nurtured the professional and personal development of his pupils.

Progress in the clinical and investigative work of each of his residents was stimulated and coordinated, of course, by "The Chief." Campbell Howard read a paper before the American Gastroenterological Association and published several articles on peptic ulcer in 1904-1905. Osler requested the collaboration of many Hopkins colleagues for the revisions of his textbook. His note to Campbell Howard on March 23, was phrased: "I wish you would look over the section on the stomach in my textbook, particularly the chronic gastritis and the neuroses, and see if you could not suggest and add something. The sooner the better." With the assistance of his colleagues, Osler completed the manuscript for the sixth edition on May 17, 1905, when he was about to leave Baltimore.

In Oxford, Osler still wrote requests for the cooperation of his Baltimore pupils, and he suggested topics for their publications. Because of the advanced clinical research methods of Friedrich von Mueller at Munich, Osler advised Howard to complete his training there. Osler congratulated his pupil immediately after his paper on eosinophilia appeared in the *Journal of Medical Research* (1907).

Abraham Flexner made the Johns Hopkins medical institutions the model for his survey of medical education in the United States and

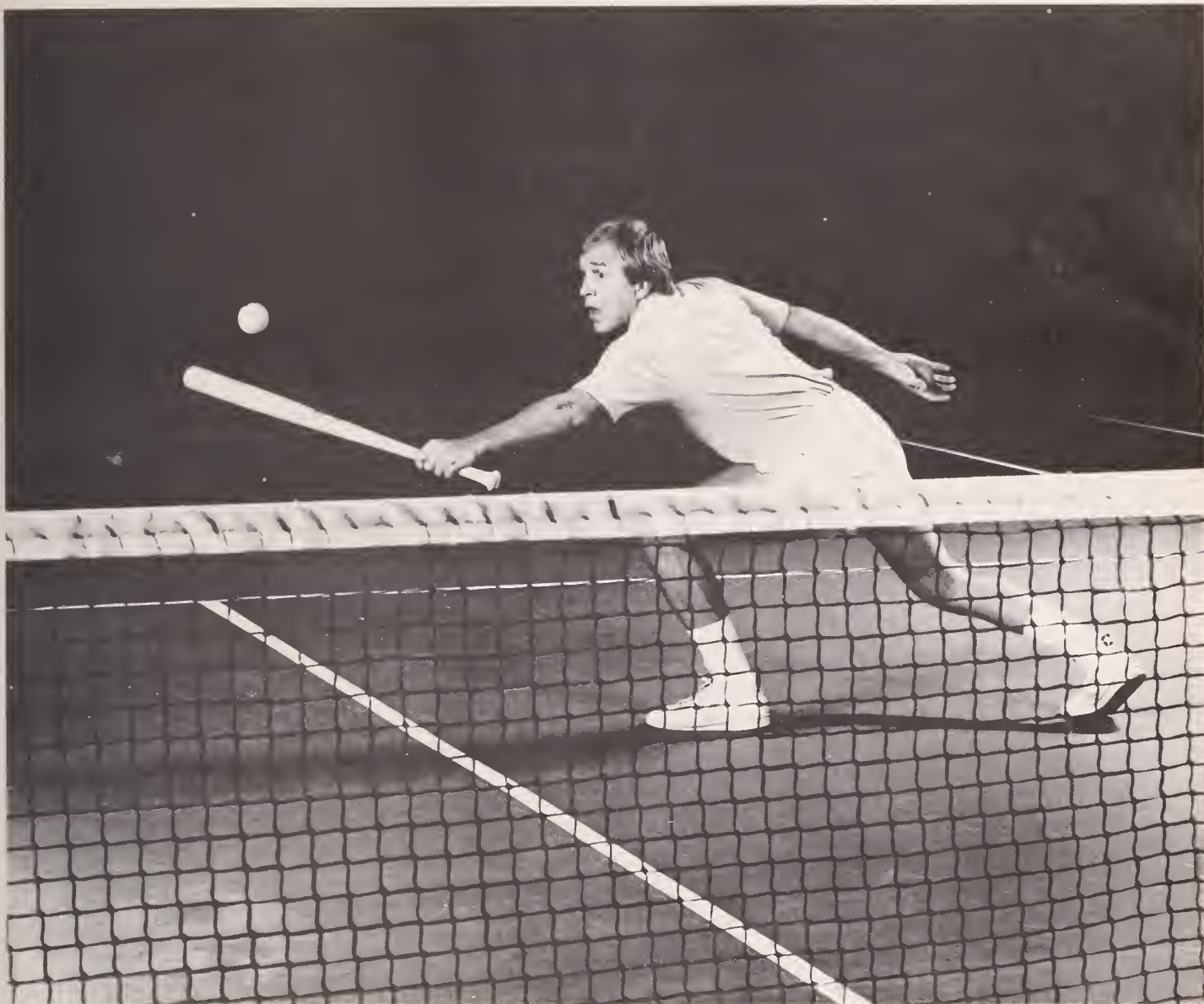
Canada. Flexner visited Montreal and commended the standards at McGill Medical College early in 1909. Later he noted deficiencies in the medical administration and clinical education at The University of Iowa. After leading officials at Iowa requested his suggestions, Flexner recommended the establishment of a clinical research laboratory and the appointment of a professor of medicine with modern training.

Campbell Howard was among those suggested and interviewed. His cable of acceptance of the chair of medicine was deferred a few days until Osler reached Quebec on August 4, 1910, and could approve the appointment. "The Chief" gave verbal and written advice and encouragement immediately. Later, during the initial days of Howard's duties at Iowa, Osler wrote on September 6: "Welcome to the West — to your new home & duties . . . I will get the slides ready for you — useful for p.g lectures or outside semi-popular ones." Many of Osler's reprints, other medical books and teaching aids soon followed, along with the wise counsel of the experienced teacher.

The correspondence also touches on the growth of Osler's influence in Britain, his concern with the introduction of "whole-time" clinical professors at Johns Hopkins, his role as honorary consultant to the British, the Canadian, and later the American medical armed services in Europe. He had a keen interest in soldiers' diseases; he worried about turmoils in the army administration, and he was concerned about people who lost relatives in World War I. Members of North American medical units were welcomed at "The Open Arms." The stream of visitors was not interrupted by the heart-breaking death in action of his own beloved son, Revere. Osler's correspondence with the Howard family in Iowa City continued until November, 1919, when the physical manifestations of his terminal illness prevented further written communications.

**V**ARIOUS ASSESSMENTS of Osler's contributions have been recorded. William S. Thayer mentioned the example he "set to his fellows and his students." William Osler inspired many people, especially those fortunate to spend several years as his pupils. Those persons carried on Osler's teachings at Iowa and other places.





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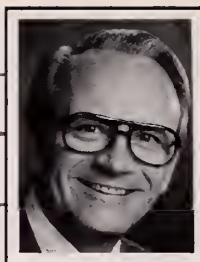


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Marion E. Alberts, M.D.

## COMMENTING EDITORIALY



### UNIVERSITY ISSUE

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*The education of most people ends upon graduation; that of the physician means a lifetime of incessant study. — Karl F. H. Marx (1796-1877)*

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*There is only one way to train capable university teachers — one way that has been practically tested — and that is to secure for the universities the services of the most distinguished men of science, and to furnish them with the necessary equipment for their teaching. — Theodor Billroth (1829-1894)*

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I OFFER THESE QUOTATIONS in our annual tribute to the University of Iowa College of Medicine as appropriate to the relationship between the faculty and practicing physicians in Iowa. The practicing physicians depend in large measure upon the University for con-

### A BOOK OF INTEREST

R. Palmer Howard, 1983, *The Chief: Doctor William Osler*. Science History Publications, Watson Publishing International, Canton, MA.

THE AUTHOR'S INTRODUCTION to this book states "William Osler had a great impact on my grandfathers, the physicians R. Palmer Howard of Montreal and Henry P. Wright of Ottawa, Canada. . . ." This influence extended to their children, and so came into

tinuing education, both from formal teaching programs and through consultation services. The distinguished professors at the College of Medicine provide a stimulus to the rest of us; and we, in turn, undoubtedly stimulate the teaching physicians to strive for a better educational climate.

This issue of IOWA MEDICINE presents various reports from the University on present programs and activities. The College of Medicine is viable and growing. We strive to provide the faculty numerous opportunities to present reports of their endeavors. We hope we can continue to provide the physicians of Iowa with more faculty reports — be they postgraduate seminars, reports of research, or progress on the overall education of the medical students.

We extend to the personnel at the College of Medicine our gratitude for the fine cooperation they have demonstrated with us at IOWA MEDICINE. We appreciate working with authors on the numerous manuscripts they present. We welcome their use of IOWA MEDICINE to impart information to all the physicians of Iowa. — M.E.A.

being this book. A considerable collection of letters, postcards, and other documents weave a fabric of which the 2 families make up the warp and the woof. They seem so closely woven together in the narrative of this book that at times I had to retreat in my reading to determine if the author was writing primarily of William Osler or of the Howard family.

This last statement is not made in a critical vein, but indicates the feeling I developed of the apparent closeness and love that entwined the 2 families. Osler, first the student, and later the mentor of a Doctor Howard, was to the Howards a father-figure as well as an advisor, guidance councilor, and close friend. The 2

(Please turn to page 161)



Before prescribing, see complete prescribing information in SK&F CO. literature or PDR. The following is a brief summary.

#### WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum  $K^+$  levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict  $K^+$  intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

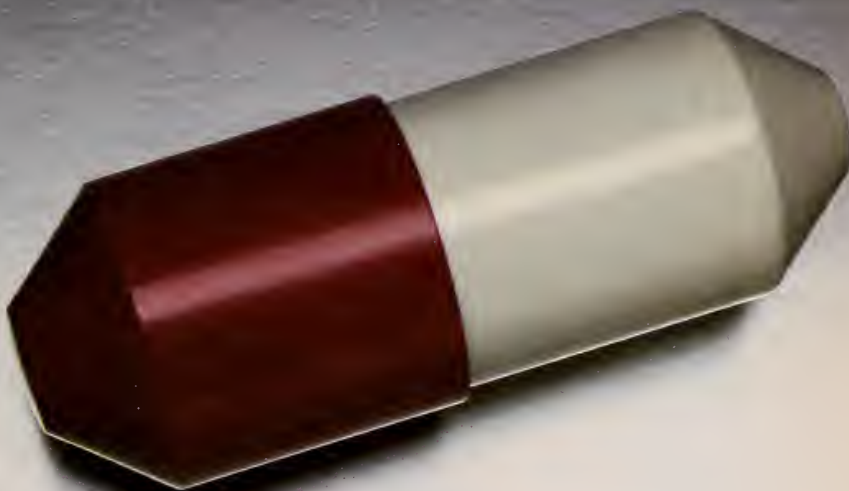
**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

**Supplied:** 'Dyazide' is supplied in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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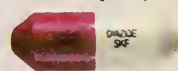


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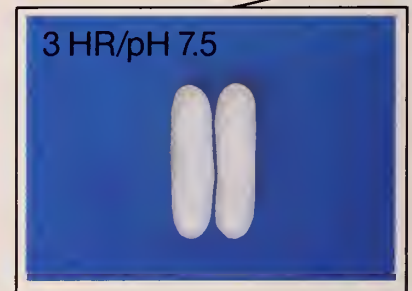
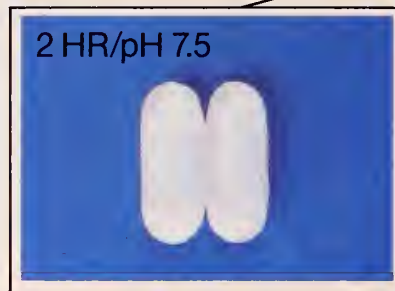
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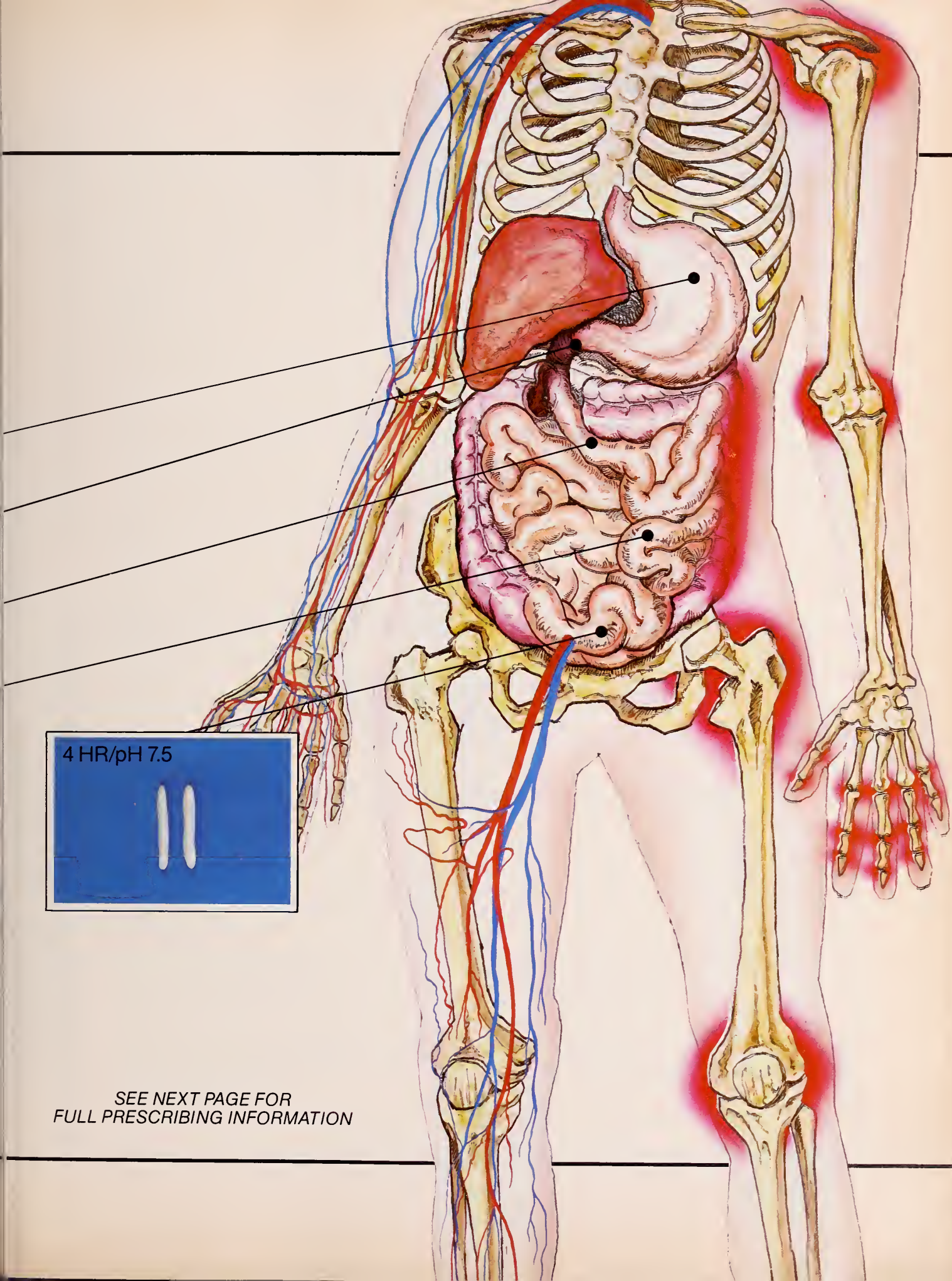
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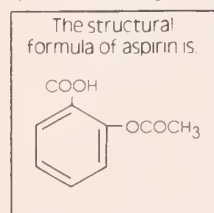
4 HR/pH 7.5

SEE NEXT PAGE FOR  
FULL PRESCRIBING INFORMATION



# ZORprin (ASPIRIN) Zero-Order Release

**DESCRIPTION:** Each capsule-shaped tablet of Zorprin contains 800 mg of aspirin, formulated in a special matrix to control the release of aspirin after ingestion. The controlled availability of aspirin provided by Zorprin approximates zero-order release, the *in vitro* release of aspirin from the tablet matrix is linear and independent of the concentration of the drug. **CLINICAL PHARMACOLOGY:** Aspirin, as contained in Zorprin, is a salicylate that has demonstrated anti-inflammatory and analgesic activity. Its mode of action as an anti-inflammatory and analgesic agent may be due to the inhibition of synthesis of prostaglandins, although its exact mode of action is not known. Zorprin dissolution is pH-dependent. *In vitro* studies have shown very little aspirin to be released in acidic solutions, whereas, Zorprin releases the majority of its aspirin (90%) in a zero-order mode at a neutral to alkaline pH. It is this pH dependence of Zorprin that reduces direct contact between aspirin and the gastric mucosa, resulting in a reduction of its gastrointestinal side-effect potential. Bioavailability data for Zorprin have confirmed that plasma levels of salicylic acid and acetylsalicylic acid can be measured 24 hours after a single oral dose. This substantiates a twice daily dose regimen. Multiple dose bioavailability studies showed similar steady-state salicylate levels for Zorprin as for conventional release aspirin using the same total daily dose. Long-term monitoring of salicylate levels showed no signs of accumulation once steady-state levels were reached (4-6 days). Studies of *in vivo* prostaglandin levels (PGE<sub>2</sub>) have shown Zorprin plasma levels of salicylic acid and acetylsalicylic acid to reduce PGE<sub>2</sub> levels 14 hours after a single oral 800 mg dose while an equivalent dose of aspirin produced a reduction of PGE<sub>2</sub> levels only through six hours. Zorprin's effect on prostaglandins other than PGE<sub>2</sub> has not been determined. Salicylates are excreted mainly by the kidney, and from studies in humans it appears that salicylate is excreted in the urine as free salicylic acid (10%); salicyluric acid (75%); salicylic phenolic (10%); acyl glucuronides (5%); and gentisic acid (<1%).



**INDICATIONS & USAGE:** Zorprin is indicated for the treatment of rheumatoid arthritis and osteoarthritis. The safety and efficacy of Zorprin have

not been established in those rheumatoid arthritis patients who are designated by the American Rheumatism Association as Functional Class IV (incapacitated, largely or wholly bedridden, or confined to wheelchair, little or no self-care). In patients treated with Zorprin for rheumatoid arthritis and osteoarthritis, the anti-inflammatory action of Zorprin has been shown by reduction in pain, morning stiffness and disease activity as assessed by both the investigators and patients. In clinical studies in patients with rheumatoid arthritis and osteoarthritis, Zorprin has been shown to be comparable to conventional release aspirin in controlling the aforementioned signs and symptoms of disease activity and to be associated with a statistically significant reduction in the milder gastrointestinal side effects (see ADVERSE REACTIONS). Zorprin may be well tolerated in some patients who have had gastrointestinal side effects with conventional release aspirin, but these patients when treated with Zorprin should be carefully followed for signs and symptoms of gastrointestinal bleeding and ulceration. Since there have been no controlled trials to demonstrate whether or not there is any beneficial effect or harmful interaction with the use of Zorprin in conjunction with other nonsteroidal anti-inflammatory agents (NSAIs), the combination cannot be recommended (see Drug Interactions). Because of its relatively long onset of action, Zorprin is not recommended for antipyresis or for short-term analgesia.

**CONTRAINDICATIONS:** Zorprin should not be used in patients known to be hypersensitive to salicylates or in individuals with the syndrome of nasal polyps, angioedema, bronchospastic reactivity to aspirin, renal or hepatic insufficiency, hypoprothrombinemia or other bleeding disorders. Zorprin is not recommended for children under 12 years of age, it is contraindicated in all children with fever accompanied by dehydration. **WARNINGS:** Zorprin should be used with caution when anticoagulants are prescribed concurrently, since aspirin may depress platelet aggregation and increase bleeding time. Large doses of salicylates may have hypoglycemic action and enhance the effect of the oral hypoglycemics, concomitant use therefore is not recommended. However, if such use is necessary, dosage of the hypoglycemic agent must be reduced. The hypoglycemic action of the salicylates may also necessitate adjustment of the insulin requirements of diabetics. While salicylates in large doses have a uricosuric effect, smaller amounts may reduce water excretion and increase serum uric acid. **USE IN PREGNANCY:** Aspirin can harm the fetus when administered to pregnant women. Aspirin interferes with maternal and infant hemostasis and may lengthen the duration of pregnancy and parturition. Aspirin has produced teratogenic effects and increases the incidence of stillbirths and neonatal deaths in animals. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential hazard to the fetus. Aspirin should not be taken during the last 3 months of pregnancy.

**PRECAUTIONS:** Appropriate precautions should be taken in prescribing Zorprin for patients who are known to be sensitive to aspirin or salicylates. Particular care should be used when prescribing this medication for patients with erosive gastritis, peptic ulcer, mild diabetes or gout. As with all salicylate drugs, caution should be exercised in prescribing Zorprin for those patients with bleeding tendencies or those on anticoagulants. In order to avoid exacerbation of disease or adrenal insufficiency, patients who have been on prolonged corticosteroid therapy should have their therapy tapered slowly rather than discontinued abruptly when Zorprin is made a part of the treatment program. Patients receiving large doses of aspirin and/or prolonged therapy may develop mild salicylate intoxication (salicylism) that may be reversed by dosage reduction. Salicylates can produce changes in thyroid function tests. Salicylates should be used with caution in patients with severe hepatic damage, preexisting hypoprothrombinemia, Vitamin K deficiency and in those undergoing surgery. Since aspirin release from Zorprin is pH dependent, it may change in those conditions where the gastric pH has been increased as a result of antacids, gastric secretion inhibitors or surgical procedures.

**Drug Interactions:** (See WARNINGS) Aspirin may interfere with some anticoagulant and antidiabetic drugs. Drugs which lower serum uric acid by increasing uric acid excretion (uricosurics) may be antagonized by the concomitant use of aspirin, particularly in doses less than 2.0 grams/day. Nonsteroidal anti-inflammatory drugs may be competitively displaced from their albumin binding sites by aspirin. This effect may negate the clinical efficacy of both drugs. Also, the gastrointestinal inflammatory potential of nonsteroidal anti-inflammatory drugs may be potentiated by aspirin. The combination of alcohol and aspirin may increase the risk of gastrointestinal bleeding. Aspirin may enhance the activity of methotrexate and increase its toxicity. Sodium excretion produced by spironolactone may be decreased in the presence of salicylates. Concomitant administration of other anti-inflammatory drugs may increase the risk of gastrointestinal ulceration. Urinary alkalizers decrease aspirin's effectiveness by increasing the rate of salicylate renal excretion. Phenobarbital decreases aspirin's effectiveness by enzyme induction. **Pregnancy Category D:** See WARNINGS Section. **Nursing Mothers:** Salicylates have been detected in the breast milk of nursing mothers. Because of the potential for serious adverse reactions from aspirin in nursing infants, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the benefit of the drug to the mother.

**ADVERSE REACTIONS: Hematologic:** Aspirin interferes with hemostasis. Patients with a history of blood coagulation defects or receiving anticoagulant drugs or with severe anemia should avoid Zorprin. Aspirin used chronically may cause a persistent iron deficiency anemia. **Gastrointestinal:** Aspirin may potentiate peptic ulcer, and cause stomach distress or heartburn. Aspirin can cause an increase in occult bleeding and in some patients massive gastrointestinal bleeding. However, the greatest release of active drug from Zorprin is designed to occur in the small intestine over a period of time. This has resulted in fewer symptomatic gastrointestinal side effects. **Allergic:** Allergic and anaphylactic reactions have been noted when hypersensitive individuals have taken aspirin. Fatal anaphylactic shock, while not common, has been reported. **Respiratory:** Aspirin intolerance, manifested by exacerbations of bronchospasm and rhinitis, may occur in patients with a history of nasal polyps, asthma, or rhinitis. The mechanism of this intolerance is unknown but may be the result of aspirin-induced shunting of prostaglandin synthesis to the lipoxygenase pathway and the liberation of leukotrienes, e.g. slow-reacting substance of anaphylaxis. **Dermatologic:** Hives, rashes, and angioedema may occur, especially in patients suffering from chronic urticaria. **Central Nervous System:** Taken in overdoses, aspirin provides stimulation which may be manifested by tinnitus. Following initial stimulation, depression of the central nervous system may be noted. **Renal:** Aspirin rarely may aggravate chronic kidney disease. **Hepatic:** High doses of aspirin have been reported to produce reversible hepatic dysfunction. **OVERDOSAGE:** Overdosage, if it occurs, would produce the usual symptoms of salicylism: tinnitus, vertigo, headache, confusion, drowsiness, sweating, hyperventilation, vomiting or diarrhea. Plasma salicylate levels in adults may range from 50 to 80 mg/dl in the mildly intoxicated patient to 110 to 160\* mg/dl in the severely intoxicated patient. An arterial blood pH of 7.1 may indicate serious poisoning. The clearance of salicylates in children is much slower than adults and should receive due consideration when aspirin overdoses occur in infants, salicylate half-lives of 30 hours have been reported in infants 4-8 months old. Treatment for mild intoxication should include emptying the stomach with an emetic, or gastric lavage with 5% sodium bicarbonate. Individuals suffering from severe intoxication should, in addition, have forced diuresis by intravenous infusions of sodium bicarbonate and dextrose or sodium lactate. In extreme cases, hemodialysis or peritoneal dialysis may be required. (\*A plasma salicylate level of 160 mg/dl in an adult is usually considered lethal.)

**DOSAGE & ADMINISTRATION:** In order to achieve a zero-order release, the tablets of Zorprin should be swallowed intact. Breaking the tablets or disrupting the structure will alter the release profile of the drug. It is recommended that Zorprin be taken with sufficient quantities of fluids (8 oz. or more). **Adult Dosage:** For mild to moderate pain associated with rheumatoid arthritis and osteoarthritis, the recommended initial dose of Zorprin is 1600 mg (2-800 mg tablets) twice a day. Because of Zorprin's prolonged release of aspirin into the bloodstream, Zorprin tablets may be taken as a b.i.d. dose. Further adjustment of the dosage should be determined by the physician, based upon the patient's response and needs. Since it will take 4-6 days to reach steady-state levels of salicylic acid with Zorprin, it is recommended dosages be given for at least one week before further adjustment. In general, patients with rheumatoid arthritis seem to require higher doses of Zorprin than do patients with osteoarthritis. **Zorprin is not recommended for children below the age of 12.** **HOW SUPPLIED: Zorprin Tablets 800 mg;** plain, white capsule-shaped tablets. Bottles of 100 Tablets—NDC 0524-0057-01. **Caution:** Federal law prohibits dispensing without prescription. U.S. Patent No. 4,308,251. **Manufactured and Distributed by: BOOTS PHARMACEUTICALS, INC., Shreveport, Louisiana 71106 U.S.A.**

12/8/83 0057-04

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families were as one in a professional sense as well as socially. The impact each had upon the other becomes very real as the author carries us from 1 year to another in his narrative. It is interesting to read of Osler's great love for children: "Without affectation, he played and responded with imagination to all children at their levels, easily sharing in their joy and laughter. Those leisurely moments were the source of mutual delight; Osler found the children refreshing and they welcomed the return of their 'grown-up' partner in frolic."

The footnotes to this book provide a complete listing of resource material available to the author. Biographical notes provide an introduction to the many persons mentioned in the narrative. A further addition is an appendix listing the bibliographies of the grandfather and the father of the author. Though I realize the purpose of the book is to reveal the nature of the closeness of the Oslers and the Howards, the title "The Chief: Doctor William Osler" implies to this reviewer that Osler was

to be the main character. However, often he is cast in a secondary role. The author has every right to be very proud of the close relationship of the 2 families, but at times he tends to over-emphasize this relationship. I cannot fault him for that but the inclusion of the bibliographies in a book entitled with Osler's name seems a bit ostentatious. — M.E.A.

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# Teaching Tomorrow's Physicians

CAROL ASCHENBRENER, M.D.

Iowa City, Iowa

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***"The challenge to medical faculty members is to identify the skills, knowledge, awareness and sensitivities physicians will need in a future that cannot be predicted from the past — then help today's students develop those qualities," says the College of Medicine's new associate dean for Student Affairs and Curriculum.***

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IN HIS BEST-SELLING BOOK *Megatrends*, John Naisbitt identifies 10 patterns of change in American society, based on content analysis of news publications and programs. Three of these trends — the shift to an information-oriented society, the emergence of a significant self-reliance movement, and the demand for high technology coupled with "high touch" — promise to exert a major influence on the reshaping of medical practice.

The physician of tomorrow must be educated in a manner that will allow him or her to adapt to the changing demands of medical consumers, to integrate information processing into office management and continuing education, and to maintain excellent communication skills and a humanistic orientation while providing an exploding array of technologies in a cost-effective manner.

In describing the philosophy of a liberal arts

education, the General Catalog of the University of Iowa states: "A liberal arts education includes something called a 'general education' because students receive general preparation for the opportunities and problems they will encounter throughout their lives. This approach to education assumes that, because we cannot now foresee all of these opportunities and problems, students are better prepared for the future if they have learned and developed abilities, awareness, sensitivities and knowledge which will help them generate responses to unexpected events."

The same philosophy may be applied to the 4-year medical curriculum, which constitutes the "general education" of the physician. The challenge of medical education today is to identify the skills, knowledge, awareness, and sensitivities that physicians will need in a future that cannot be predicted on the basis of the past.

The American Association of Medical Colleges currently is completing an extensive 3-year study of the General and Professional Education of the Physician (GPEP) with the assistance of funding from the Henry J. Kaiser Family Foundation. After gathering extensive information and opinions via public hearings and written submissions from medical students, faculty and deans and from professional societies and college faculties, the GPEP task force has identified 14 "Areas of Concern" relating to the structure and orientation of pre-clinical and clinical training in medical schools.

Six of these concerns, and the University of Iowa programs addressing such concerns, are outlined here. Because the College of Medicine has looked to the future rather than cling to comfortable tradition, its faculty has foreseen and responded to many of the challenges in

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Dr. Aschenbrener is an associate professor of Pathology and was recently appointed associate dean at the U. of I. College of Medicine.

medical education that are just now beginning to draw national attention.

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*CONCERN: Emphasis on Memorization of a Vast Amount of Factual Data and Neglect of Independent Learning Skills.*

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The proliferation of easily accessible medical information systems and the emergence of computerized diagnostic programs does not obviate the necessity for a firm foundation of essential medical knowledge. The "facts" of the preclinical sciences are the vocabulary of the functioning clinician. At the University of Iowa, a number of strategies are utilized to integrate problem-solving skills and clinical application into the basic sciences.

In Gross Human Anatomy, for example, students correlate structure with function in small groups by studying their own bodies, and periodic lectures relate gross anatomy to radiographic findings. In Medical Biochemistry, major emphasis is given to development of the ability to analyze the biochemical aspects of clinical problems. The recently restructured Biostatistics course requires students to apply statistical concepts in the analysis of clinical studies reported in peer-reviewed journals. Students continue to perform selected laboratory experiments in Medical Physiology and Medical Microbiology. Summer research fellowships, year-long research programs, "pathology-year" externships, the Senior Honors program in Internal Medicine, and independent study options in the elective fourth year provide crucial opportunities for many students to develop strategies of scholarship.

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*CONCERN: Need to Increase Small-Group Instruction Reported by Most Schools.*

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At the University of Iowa, small-group instruction has been an integral and expanding component of the curriculum since the late 1960s. Most preclinical and clinical courses include some small-group instruction. In both Medical Biochemistry and Medical Physiology, students apply basic concepts and utilize essential facts to solve clinical problems in a small group setting.

A major section of both the General and Systemic Pathology courses is devoted to the de-

velopment of problem-solving skills. In small discussion groups that meet weekly, students analyze information about patients, laboratory data, and microscopic findings to arrive at a diagnosis and present their rationale and conclusions.

In the first semester, the required Human Dimensions in Medicine course provides a weekly small-group experience in which students are encouraged to experiment with styles of communication that will increase their ability to interact sensitively and effectively with patients and peers. The Introduction to Clinical Medicine course relies heavily on small-group instruction to teach the essentials of patient interviewing and physical examination. During the course, each student has 33 small-group sessions that include exposure to student and faculty preceptors, simulated patients, a computerized patient simulator, and actual hospital patients.

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*CONCERN: Lack of Faculty Experience and Cost of Technology Inhibit Incorporation of Computers Into Medical Education.*

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Medical students are not yet required to possess personal computers, but students and faculty alike are rapidly acquiring "computer literacy," and computer technology already has a firm foothold in the University of Iowa curriculum.

For more than 10 years, all students have participated in at least 3 Computer-Assisted Patient Simulations while taking Systemic Pathology. Using a CRT to order laboratory and diagnostic tests, students attempt to diagnose specific causes of anemia, jaundice and malabsorption and receive feedback on test rationale and cost. A recently developed 4-hour computer-assisted videodisc program introduces junior medical students on the Pediatrics clerkship to the neuromotor assessment of infants. This sophisticated program will also be used in the education of residents and allied health personnel.

The most elaborate application of computerization is "Harvey," the Cardiology Patient Simulator. Used extensively by second-year medical students, "Harvey" simulates the blood pressure, arterial and venous pulses, and auscultatory findings of most cardiac diseases. Ancillary patient information, labora-



tory results, ECG tracings, and X-rays are presented on a screen at the head of "Harvey's" bed. Students control the rate of learning and evaluate themselves in a self-assessment format.

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*CONCERN: Lack of Delineation of Specific Clinical Knowledge and Skills Requirements.*

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In the late 1970s, clinical departments developed extensive educational objectives specifying the knowledge, skills, and behaviors that a medical student is expected to learn. These objectives constitute a framework for instruction and evaluation. Both knowledge and skills are evaluated on clinical clerkships.

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*CONCERN: Need for Education in Ambulatory Settings.*

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The popular elective MECO ("Medical Education in the Community") program attracts about one-third of each first-year class. Students spend 8 weeks of their post-freshman summer working with practitioners in their offices and participating in some of the physicians' professional and social activities.

The required junior preceptorship in Family Practice enables all students to spend 2 weeks with an Iowa primary care physician. Many cooperating Iowa practitioners have made the preceptorship a highly successful program, and their help is gratefully acknowledged elsewhere in this issue. Senior electives provide additional opportunities to experience medical care in an ambulatory setting. Each year some students arrange electives in underserved areas and in developing countries.

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*CONCERN: Development of Desirable Values and Attitudes Should Be Integral to Medical Education.*

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From their first week as freshmen through their senior years, a variety of concerted efforts are made to encourage students to grow as persons and to explore their own values and attitudes.

In Human Dimensions in Medicine, freshmen meet weekly with a faculty member and second-year student to discuss humanistic

issues, to share their attitudes about medicine and their reactions to medical school, and to improve their interpersonal skills. In Perspectives in Medicine, student coordinators invite speakers from a variety of health-related disciplines to share their perspectives on health care.

Simulated patients who serve as Teaching Associates in Introduction to Clinical Medicine give invaluable feedback to students learning to perform pelvic and male genito-rectal exams. These associates give students some insight into how their words and behaviors may be perceived by patients.

A sophomore elective, Interpersonal Skills, introduces students to a model of helping others and integrates specific verbal skills with stages of the helping process. Other sophomore electives in the medical humanities provide an overview of the historical development of medicine, survey the portrayal of medicine and physicians in art and literature, and compare modern medicine in its sociopolitical context with that of ancient and medieval medicine. A series of lunch-time discussions brings interested faculty and students together to discuss medical literature, history and ethics.

A week-long Human Sexuality segment of Introduction to Clinical Medicine allows students to learn about a variety of sexual practices and problems from an interdisciplinary perspective. Coordinated small group discussions encourage them to explore their attitudes about sex and provide an opportunity to develop a comfortable style of eliciting a sexual history. Health policy issues are the focus of an optional evening discussion group. Ethical issues are debated in the context of specific clinical situations at monthly noon seminars, and a concerted effort is being made by several departments to integrate some consideration of ethics into regular clinical conferences. Electives in bioethics are offered for sophomores and seniors. The seniors may also choose directed or independent study in medical humanities or medical history.

Prediction of the future is perhaps more difficult today than at any other time in history. At the University of Iowa College of Medicine, faculty remain committed to continued development of a general medical education that will facilitate Iowa graduates' ability to respond effectively, enthusiastically, and ethically to unforeseen challenges.

# Scanlon Loans Bolster U. of I. Student Aid Programs

KAY COLANGELO, Ph.D., and  
CAROL ASCHENBRENER, M.D.  
Iowa City, Iowa

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*Over 30-plus years the Iowa Medical Society has provided financial assistance to many deserving medical students. The amount of money provided to Iowans through the Scanlon Loan Fund will surpass one million dollars this academic year. The Scanlon Fund and other financial aid sources at the U. of I. are described in this article.*

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**S**OMETIME THIS YEAR, the Dr. George H. Scanlon Student Loan Fund will lend its one millionth dollar to a medical student. As the largest single non-federal source of financial assistance to University of Iowa medical students, the Scanlon Loan Fund plays an increasingly important role in financial aid programs being buffeted by fluctuations in the economy, rising educational and living costs, and fewer federal dollars.

As a principal fund within the Iowa Medical Foundation, Scanlon Loans totaling \$80,805 were made to 39 U. of I. medical students in 1982-83. This year, \$108,000 has been loaned to 50 U. of I. students from the Foundation fund. Iowans attending any medical school can apply for a Scanlon Loan, and in 1982-83 some \$98,000 was loaned from this fund, contributed to by Iowa physicians.

Students are seeking and receiving more grants and loans from funds administered outside the University, such as the Scanlon Loan Fund. In 1980-81 those funds totaled \$102,976, rising to \$157,393 in 1982-83. Several of the

outside sources of aid request that the College of Medicine recommend recipients. Other institutions and individuals provide aid through private agreements with individual students.

The College of Medicine has 3 major loan funds, which all show an increase in use: the Carroll Brown Medical Student Loan, Kellogg/Medical Education Assistance Program Loan, and the Sledd Foundation Loan. In 1980-81, 17 students received \$12,774 from these funds; just two years later, 79 students received \$137,269. These funds are not used until students have exhausted all possible federal sources of aid. Several other endowed loan accounts that charge low interest — or no interest at all — ensure that no student will be forced to leave the College of Medicine because of lack of funds. Among these are the Barry Freeman Memorial Loan Fund, Bonnie Colsch Memorial Loan Fund, Dr. Richard Todd Loan Fund, the J. D. Treneman, M.D., Loan Fund, and the Fred W. and Floyd T. Neubauer Fund.

## FOR MINORITY STUDENTS

The University of Iowa provides grants for minority students enrolled in the Educational Opportunities Program (EOP), with a large portion of the money going to medical students. In 1980-81, 22 medical students received \$105,614 from this grant, and in 1983-84, 53 students will receive \$429,613. The maximum EOP grant is for tuition (\$3,920 for an Iowa resident this fall) plus \$2,100, which of course does not cover the student's entire budget. Minority students must seek out other loans for the balance of their needs. Admission to the Educational Opportunities Program does not automatically entitle the student to grant support. Awards to these students are based on demonstrated financial need, just as are all other awards.

By far the most available loan program for

---

Dr. Colangelo is a program associate for student affairs, and Dr. Aschenbrener is associate dean for student affairs and curriculum at The University of Iowa College of Medicine.



medical students is the federal Guaranteed Student Loan (GSL). In 1982-83, 508 medical students received \$2,276,502 from this program alone, two-thirds of the total aid. The GSL has a two-year deferral period after the student graduates and 9% interest does not accrue until the repayment period begins. The loans, obtained directly by the student from a lending institution, are insured by the federal or the state government. While enough GSL money has been available to accommodate students, such funds may be in jeopardy. Federal guidelines also have become more stringent. If a student's parents earn more than \$30,000 annually, the student is required to demonstrate need to receive a GSL. Medical students can borrow up to \$5,000 per year to a maximum of \$25,000 in the GSL program.

Two other federal programs, the Health Professions Student Loan (HPSL) and the National Direct Student Loan (NDSL), show a decrease in activity because of fewer federal dollars. In 1980-81, the HPSSL provided \$453,318 for 132 students and \$433,906 for 172 students in 1982-83. The NDSL accounted for \$153,598 for 80 students in 1980-81 and \$146,070 for 104 students in 1982-83. Both programs are revolving funds, with schools allowed to make loans from repayments. Guidelines for these programs have become more rigorous, however, and federal appropriations are expected to disappear soon, leaving schools with only the money which comes into the accounts from repayments. The College of Medicine will receive only \$6,000 of new HPSSL money in 1984-85.

#### INCREASING TUITION

With increasing tuition and living costs, the amount of aid being sought by medical students continues to climb. The grand total of student aid from all sources was \$3,242,128 in 1980-81 and \$4,126,494 in 1982-83. Between 1980 and 1983, medical tuition for an Iowa resident increased from \$1,460 to \$3,200 and for a non-resident from \$3,410 to \$6,820. In 1984-85, tuition will be \$3,920 for Iowans and \$8,520 for non-residents. With the projected tuition increase, an in-state, unmarried, first-year student is anticipated to have a budget in excess of \$10,000 for 1984-85. And costs are expected to continue to rise.

To date, the College of Medicine has been able to assist all students who have qualified

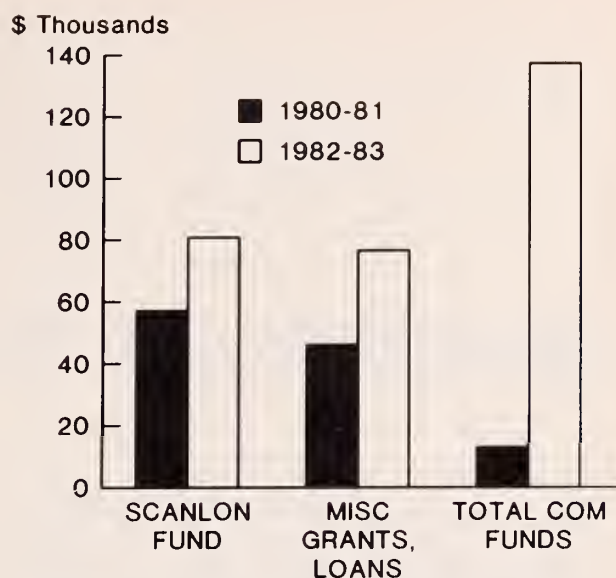


Figure 1. Increasing importance of non-federal funds in U. of I. medical student financial aid programs is illustrated. Bars at left and center show amount of money provided by loan funds administered outside the University. Bars at right show money provided by College of Medicine loan funds.

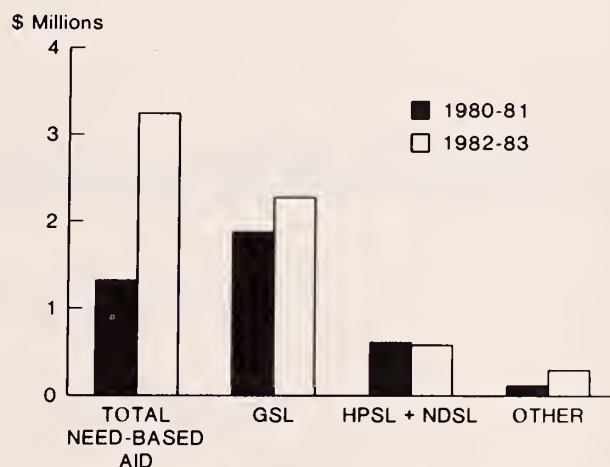


Figure 2. Dramatic increase in "need-based" financial aid in a 3-year period is shown in bars at left, with 230 medical students considered eligible for financial aid on the basis of their Financial Aid Form and receiving \$1,316,806 in 1980-81, and 364 students receiving \$3,242,617 in 1982-83. The Guaranteed Student Loan (GSL), Health Professions Student Loan (HPSSL), and the National Direct Student Loan (NDSL) provide large portions of medical student financial aid, but programs are threatened by more stringent guidelines and fewer federal dollars.

for aid. Without such help as the Scanlon Loan Fund and others have provided, this would not be the case. As federal assistance programs continue to disappear, it is critical that new sources of private funds be found. The College of Medicine is committed to vigorous fund-raising for student aid.

# Appreciation to Physician Preceptors

THE UNIVERSITY OF IOWA College of Medicine extends sincere appreciation to the 125 Iowa physicians who served last year (academic year 1982-83) as preceptors for third- and fourth-year medical students and for stu-

dents in the Physician Assistant Program. These preceptorships are an important element in the College's outreach effort, and they permit students to observe first-hand a medical practice away from the academic setting.

## 1982-83 PRECEPTORS FOR THIRD YEAR PRECEPTORSHIP

Served Students from Class of 1984

Ankeny	Radney R. Carlson, M.D. (7)
Atlantic	Thomas Payne, M.D. (4)
Baane	Jahn F. Murphy, M.D. (2), Wayne E. Rause, M.D. (1)
Burlington	Ja Ellen Hath, M.D. (2)
Carrall	Hamer Skinner, M.D. (2)
Cedar Falls	Robert N. Bremner, M.D. (2), James R. Young, M.D. (2)
Cedar Rapids	James F. Stiles, M.D. (5), Robert L. Swaney, M.D. (2), Mark J. Tyler, M.D. (1)
Centerville	James B. McCanville, M.D. (3)
Cherakee	Gene E. Michel, M.D. (1)
Clarinda	G. William Richardsan, M.D. (1)
Clinton	George L. Yark, M.D. (2)
Crestan	Peter R. Marcellus, M.D. (3)
Davenport	Marvin F. Ohsann, M.D. (1)
Decarah	James A. Bullard, M.D. (2), Drew Pellett, M.D. (5), Max Quaas, M.D. (2)
Denisan	Danald J. Sall, M.D. (1)
Des Moines	James R. Bell, M.D. (3), Charles R. Petersan, M.D. (5), Ronald A. Shirk, D.O. (1)
Dyersville	Anthony Sweeney, M.D. (1)
Eagle Grave	Dale Harding, M.D. (1)
Elkader	Kenneth E. Zichal, M.D. (1)
Emmetsburg	Gerald J. Wieneke, M.D. (2)
Estherville	Robert S. Hranac, M.D. (1)
Fairfield	James H. Dunlevy, M.D. (1)
Forest City	Robert C. Haakensan, M.D. (1)
Fart Dodge	Gary L. LeValley, M.D. (1)
Grinnell	Robert Carney, M.D. (2)

Guttenberg	Robert J. Merrick, M.D. (4)
Hamburg	Frederic M. Ashler, M.D. (2)
Harlan	Robert E. Danlin, M.D. (3)
Humboldt	Laine D. Dvarak, M.D. (2)
Iowa City	Victar G. Edwards, M.D. (5)
Iowa Falls	Francis L. Pisney, M.D. (3)
Kalana	Dwight G. Sattler, M.D. (3)
Lake City	James C. Camstack, M.D. (1)
Lamani	Narman M. Nelson, M.D. (1)
Le Mars	Daryl E. Daarenbas, M.D. (2)
Lean	Larry W. Richards, M.D. (1)
Manchester	Mary Ann Arends, M.D. (4), Paul A. Searles, D.O. (1)
Manilla	Jahn M. Hennessey, M.D. (3)
Maquaketa	Jahn A. Braman, M.D. (1), Clifford, L. Rask, M.D. (2)
Marenga	Dan Hagan, M.D. (2)
Marshalltown	David L. Thomas, M.D. (3)
Masan City	James K. Caddingtan, M.D. (1), Jan R. Yankey, M.D. (3)
Missouri Valley	Jahn M. Barnes, M.D. (2)
Maunt Vernal	Kim B. Brandt, M.D. (1)
Muscatine	Steven S. Kragh, M.D. (3), Dean McGinty, M.D. (1), Mark Odell, M.D. (1), Patrick A. Tranmer, M.D. (1)
Ogden	Enfred E. Linder, M.D. (3)
Osceola	James D. Kimball, M.D. (1)
Oskalaasa	R. Michael Callison, M.D. (3)
Red Oak	William G. Artherhalt, D.O. (1)
Rackford	Russell G. Barrett, M.D. (2)
Siaux City	Gerald J. McGawan, M.D. (2), Jahn N. Redwine, D.O. (1), Jahn H. Roberts, M.D. (2)
Salan	Bruce Van Hauweling, M.D. (1)
Spencer	George F. Fieselmann, M.D. (2), Jahn E. Kelly, M.D. (4)
Spirit Lake	Danald F. Radawig, M.D. (1)
State Center	Larry R. Beaty, M.D. (1)
Starm Lake	Timothy K. Daniels, M.D. (2)
Vinton	Sherman L. Anthony, M.D. (2)
Waterloa	Kent R. Oheim, M.D. (1)
Waukan	Bill R. Withers, M.D. (2)
Webster City	Subhash C. Sahai, M.D. (2)
West Union	Larry H. Baekke, M.D. (1)
Winfield	Billy R. Nardyke, M.D. (2)

Figures in parentheses show number of students physicians had during year.



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## 1982-83 PRECEPTORS FOR FOURTH YEAR ELECTIVE PRECEPTORSHIP

### Served Students from Class of 1983

Ankeny .....Radney Carlson, M.D. (1)

Cedar Rapids .....Percy Horris, M.D. (1), Tom Schroeder, M.D. (1),  
James Stiles, M.D. (1), Robert Swaney, M.D. (1)  
Decarah .....James Bullard, M.D. (1)  
Le Mars .....Gerald Van Es, M.D. (1)  
Maunt Vernan .....Kim Brandt, M.D. (1)  
Muscotine .....Farrest Dean, M.D. (2), Steven Kragh, M.D. (1)  
Salan .....Bruce Van Hauweling, M.D. (2)

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## 1982-83 PHYSICIAN ASSISTANT PROGRAM PRECEPTORS

Ames .....Jack T. Swanson, M.D.  
Centerville .....Anthony Owca, M.D.  
Davenport .....Gardan Chervitz, M.D., Mike Dehnec, M.D.,  
Eugene Jahnsan, M.D., Gearge Vitek, M.D.  
Denver .....Kenneth D. McMains, M.D.  
Des Moines .....Michael Abrams, M.D., Oscar Barillas, M.D., Ger-  
trude Daughten, D.O., Lester R. Dragstedt, M.D.,  
J. R. Gambill, M.D., David Kaung, M.D., Aldo  
Knight, M.D., Thomas Lucos, M.D., Sinesia Misal,  
M.D., Carl Petersan, M.D., Greg Rohs, M.D.,  
Wayne Sands, M.D., Rizwon Shah, M.D.  
Dubuque .....Allen Harves, M.D., Poul Laube, M.D., Barry A.  
Smith, M.D.  
Hamptan .....David E. Dennis, D.O.

Iawa City .....David A. Culp, M.D., Albert Crom, M.D., Gerald  
DiBano, M.D., Peter R. Jachimsen, M.D., Douglas  
Loube, M.D., Henry A. Nasrollah, M.D., Thomas  
Parsans, M.D., Adalph Sahs, M.D., Fred D. Staob,  
M.D.  
Marshalltown .....Franca L. Chua, M.D., Axel Lund, M.D., Danald  
Reading, M.D.  
Mosan City .....Mark C. Jahnsan, M.D., Jahn MacGregar, M.D.,  
Carl J. Plank, M.D.  
Mt. Pleasant .....R. England, M.D., B. P. Makkapoti, M.D., Jaime  
Pallit, M.D.  
Muscatine .....Amir Arbisser, M.D., William Catalana, M.D., For-  
rest Dean, M.D., G. P. Kealey, M.D., David Kun-  
del, M.D., Richard Kundel, M.D., Mark Odell,  
M.D.  
Ottumwa .....Jay Heitsman, M.D.  
Siaux City .....Gerald McGawon, M.D., Ray Sturdevant, M.D.  
Vintan .....Sherman L. Anthony, M.D.  
Waterlaa .....Siddiq M. Arab, M.D., Robert Dawnie, M.D., Dale  
Phelps, M.D., Robert Sauer, M.D., Robert Singer,  
M.D., Luke Tan, M.D., C. A. Waterbury, M.D.  
Wiltan .....Jahn N. Allhiser, M.D.

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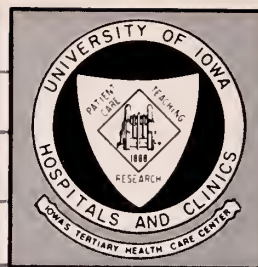
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## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### ISOTRETINOIN (AC CUTANE<sup>TM</sup>) FOR THE MANAGEMENT OF SEVERE NODULOCYSTIC ACNE

**I**SOTRETINOIN [13-cis-retinoic acid] (Ac cutane<sup>TM</sup>) is an oral retinoid used for the treatment of severe nodulocystic acne that has not responded to other forms of therapy. Recently the use of isotretinoin has been recommended in other types of severe inflammatory acne resulting in scarring, gram-negative folliculitis (a complication of antibiotic treatment of acne), severe acne rosacea, and in selected cases of hidradenitis suppurativa.<sup>1</sup> The drug has also been used experimentally in disorders of keratinization.

#### PHARMACOLOGY/MECHANISM

Retinoids, through their relationship to vitamin A, may have many actions related to growth promotion, the differentiation and maintenance of epithelial tissues, reproduction, and vision. For the purposes of this discussion of the use of isotretinoin in acne, a more limited pharmacological profile can be presented. Isotretinoin is a marked inhibitor of sebaceous gland function.<sup>2</sup> Histologic studies demonstrate a great decrease in sebaceous gland size.<sup>3</sup> Because of the decrease in the

functional capacity of the glands, there is a secondary decrease in the intrafollicular *Propionibacterium acnes* population. The drug also has been shown to have antikeratinizing effects which may be important in the therapy of acne. Isotretinoin also has been shown to have anti-inflammatory activity.

#### PHARMACOKINETICS

Isotretinoin is a lipophilic molecule which is absorbed in the small intestine. Peak blood concentrations occur approximately 2 to 3 hours after drug ingestion.<sup>4</sup> The drug should be taken in 2 divided dosages. The bioavailability of the drug is greatest when isotretinoin is given with meals. In contrast to vitamin A, more than 99% of isotretinoin is bound to albumin in the plasma. Also in contrast to vitamin A, there is no liver storage of isotretinoin. The major metabolite of the drug is 4-oxo-isotretinoin. Glucuronidation of the drug occurs and the drug is excreted in the bile and urine. The half-life of isotretinoin and its major metabolite, 4-oxo-isotretinoin, ranges from 10 to 20 hours.

#### CLINICAL TRIALS AND EXPERIENCE

Multiple clinical trials have demonstrated the effectiveness of the drug with upwards of 90% clearing in many cases during the first course of therapy.<sup>2, 3, 5-7</sup> Lesions of the face tend to show greater clearing than those on the back and chest. Isotretinoin can often be stopped when more than 75% improvement is obtained due to the fact that continued improvement is usually seen after therapy is stopped. One of the remarkable findings following isotretinoin therapy have been the pro-

(Please turn to page 171)

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.



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# If you still believe in me, save me.

For nearly a hundred years, the Statue of Liberty has been America's most powerful symbol of freedom and hope. Today the corrosive action of almost a century of weather and salt air has eaten away at the iron framework; etched holes in the copper exterior.

On Ellis Island, where the ancestors of nearly half of all Americans first stepped onto American soil, the Immigration Center is now a hollow ruin.

Inspiring plans have been developed to restore the Statue and to create on Ellis Island a permanent museum celebrating the ethnic diversity of this country of immigrants. But unless restoration is begun now, these two landmarks in our nation's heritage could be closed at the very time America is celebrating their hundredth anniversaries. The 230 million dollars needed to carry out the work is needed now.

All of the money must come from private donations; the federal government is not raising the funds. This is consistent with the Statue's origins. The French people paid for its creation themselves. And America's businesses spearheaded the public contributions that were needed for its construction and for the pedestal.

The torch of liberty is everyone's to cherish. Could we hold up our heads as Americans if we allowed the time to come when she can no longer hold up hers?

## Opportunities for Your Company.



You are invited to learn more about the advantages of corporate sponsorship during the nationwide promotions surrounding the restoration project. Write on your letterhead to: The Statue of Liberty-Ellis Island Foundation, Inc., 101 Park Ave., N.Y., N.Y. 10178.



Save these monuments. Send your personal tax deductible donation to: P.O. Box 1986, New York, N.Y. 10018. **The Statue of Liberty-Ellis Island Foundation, Inc.**

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longed remissions, which often last for several years. In experimental studies, several different dosages of isotretinoin have been used, namely 0.1, 0.5, and 1 mg/kg/day.<sup>2, 7</sup> The clinical response with the 3 dosages has been roughly the same, but with the lowest dose over 40% of the patients have required retreatment whereas with the highest dose only 10% of the patients have required retreatment.<sup>7</sup> Therefore, 1 mg/kg/day is the recommended dose. During the onset of therapy, severe flares of acne may occur, requiring a decrease in the dose of the drug and concomitant corticosteroid therapy. The dose of isotretinoin may also have to be decreased if side effects are too severe. The dosage of isotretinoin may have to be increased to as high as 2 mg/kg/day if there is severe involvement of the back or chest. Individual courses of therapy should be no longer than 20 weeks. If retreatment is required, it can be started 8 weeks after the first course of therapy has been terminated. It is rare if ever that a third course of therapy is required.

#### SIDE EFFECTS

Because of the multiple effects of vitamin A derivatives, it is not unexpected that a broad spectrum of side effects have been observed with isotretinoin. It is probably fair to say that every patient treated with the drug will have 1 or more clinical side effects. Mucocutaneous side effects are most common. Cheilitis is seen in approximately 90% of all patients. Other mucocutaneous side effects observed during isotretinoin therapy include facial dermatitis, xerosis, pruritus, desquamation of the tips of the fingers and soles, hair loss, the development of exuberant granulation tissue at lesion sites and in the paronychia region, epistaxis, dry mouth, conjunctivitis, and nose bleeds. Central nervous system side effects include headache, lethargy, and fatigue. Pseudotumor cerebri has occurred during therapy, but in most instances the patients were also taking antibiotics such as tetracycline and minocycline which also can cause pseudotumor cerebri. Pain, tenderness, and stiffness of the muscles, bones, or joints have also been seen and may require the use of nonsteroidal anti-inflammatory agents or other analgesic drugs. The most significant laboratory abnormalities

have been dose-related increases in triglycerides which may be accompanied by a decrease in plasma high density lipoproteins. Mild elevation of liver function tests also may occur.

All of the above clinical and laboratory side effects have been transient in nature and have been reversible on discontinuation of therapy. Some of the side effects, such as the triglyceride elevations, have been seen more commonly when the drug has been used experimentally in disorders of keratinization where higher daily dosages have been used.<sup>8</sup> In these studies, bony hyperostoses have also been observed and there have been 2 reports of premature epiphyseal closure. Whether these latter side effects, which should be emphasized have not been seen in acne patients, are permanent remains to be determined.

The drug is teratogenic<sup>9</sup> and a number of major fetal abnormalities have been seen in the term births of women who have become pregnant while taking the drug.<sup>10</sup> These fetal abnormalities include hydrocephalus, microcephaly, and external ear abnormalities. Therefore, the drug must not be administered to anyone who is either pregnant or contemplating becoming pregnant, and the prescribing physician must make certain that any female patient of childbearing age is on an effective form of contraception throughout the course of therapy and for at least 1 month after the drug is stopped. If a patient does become pregnant, the patient must be counseled on the potential risk to the fetus should pregnancy be continued. Mutagenic effects have not been observed.

The drug is available in 10- and 40-mg capsules. The average individual receiving a dose of 1 mg/kg/day will require 2 40-mg capsules. Adjustment of the dosage level can also be achieved by using different amounts of isotretinoin on alternate days.

#### DISCUSSION

There can be little question that isotretinoin is a very effective drug for the treatment of acne. However, because of the pattern of side effects and the teratogenic potential of the drug, its use should be restricted to treatment-resistant conditions as outlined in the introduction, and patients should be fully informed of the many side effects that occur during ther-

(Please turn to page 172)

## DRUG THERAPY REVIEW

(Continued from page 171)

apy. The drug should not be used for the management of patients with ordinary acne vulgaris. Careful monitoring of the clinical and laboratory responses of the patient is required. Pretreatment laboratory tests should include a CBC, SMA-12, and fasting plasma triglyceride measurements. Fasting plasma triglyceride should be measured approximately 2 to 3 weeks after the onset of therapy. The entire laboratory battery should be repeated again at 4 to 6 weeks. Further laboratory monitoring is dependent upon the results of these evaluations. Significant triglyceride elevations are unlikely to occur after 6 weeks of therapy. Nonetheless, it is probably best to repeat the laboratory battery at the end of the course of

therapy as a guideline for future treatment. —  
*John S. Strauss, M.D., professor and head, Department of Dermatology.*

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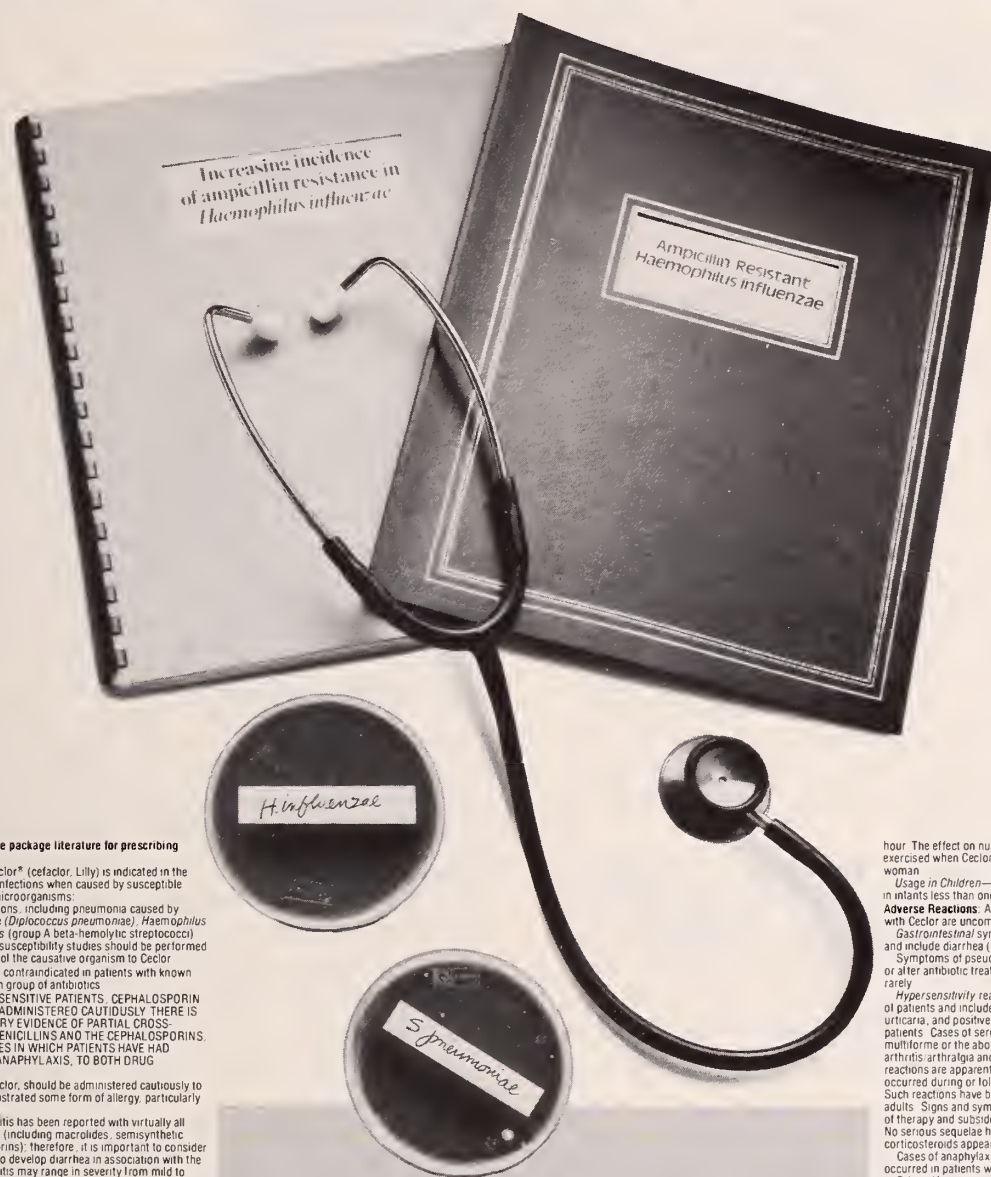
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## Brief Summary Consult the package literature for prescribing information.

**Indications and Usage:** Cefclor® (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication:** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS: CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions:** General Precautions—If an allergic reaction to Cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. When antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinestix® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy—Pregnancy Category B:**—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers:**—Small amounts of Cefclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

# Cefclor®

## cefclor

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Cefclor® (cefclor, Lilly) is administered to a nursing woman.

**Usage in Children:**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions:** Adverse effects considered related to therapy with Cefclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

**Hypersensitivity reactions:** have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis, arthralgia, and frequently fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain:**—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic:**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic:**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal:**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

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\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

## References

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6. Antimicrob Agents Chemother. 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G.L. Mandell, R.G. Douglas, Jr., and J.E. Bennett), p. 487. New York: John Wiley & Sons, 1979.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630.

300035

Information of Interest

## STATE DEPT. OF PUBLIC HEALTH



### HOSPICE CARE — AN ALTERNATIVE MEDICARE BENEFIT

**E**FFECTIVE NOVEMBER 1, 1983 the scope of Medicare benefits was expanded to include coverage for hospice care for terminally ill Medicare beneficiaries who elect to receive such care from a certified hospice provider. The hospice benefit was mandated under the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982 (Public Law 97-248 enacted on September 3, 1982).

The hospice benefit is intended to meet the special needs of patients experiencing terminal illness and to help their families cope with the unique problems and distress related to this difficult time. The patient and family, as the primary unit of care, are actively encouraged to make decisions about hospice care.

#### What is a Hospice?

The term "hospice" derives from the Latin "hospitium" which was a place of shelter or inn for travelers. Hospice currently is defined as a concept rather than a place. It is an approach to treatment where the emphasis is placed upon palliative and supportive care to meet the special needs of patients and their families during the final stages of terminal illness. An organized interdisciplinary approach is used to deliver comprehensive services on a 24-hour-a-day 7 day a week basis.

In the United States, the hospice concept emphasizes home care. A team of health practitioners, clergy and volunteers deal with the

patient's physical, psychological and spiritual needs and counsel the family, as well, enabling the terminally ill individual to remain at home in the company of family and friends as long as possible. Short term inpatient services are utilized only when medical intervention is required to control pain or alleviate symptoms or when the family needs temporary relief from the burden and stress involved in caring for the individual (respite care).

#### Regulations summary

A hospice program is defined under Medicare regulations as a public or private organization (or subdivision thereof) which:

(a) is primarily engaged in providing hospice care, including bereavement counseling on a 24-hour basis, as needed;

(b) provides the services in the home, on an outpatient basis, and on an inpatient basis, as appropriate (care provided in an intermediate care facility is limited to respite care only);

(c) provides core services through hospice employees; (other covered services can be obtained under arrangements)

(d) maintains professional management responsibility through legally binding contractual agreements for services not provided directly to assure continuity of care and maintenance of fiscal responsibility — (1) the written agreement must specify that the contractor will execute the hospice plan of care and maintain the hospice's medical record and (2) inpatient care agreements must specify the services to be provided, documentation requirements, personnel qualifications and financial liability, among other items;

(e) limits its use of inpatient care to an aggregate of no more than 20% of its total days of elected care;

(f) has one or more interdisciplinary groups

This information on public matters is furnished and sponsored by the Iowa State Department of Health.



(including at least 1 physician, a registered professional nurse, a social worker, a counselor and any other individual(s) the hospice deems appropriate) that establish the policies governing provision of care and provides or supervises the care delivered;

(g) has a governing body providing for the centralization of authority and responsibility and for overall operation of the hospice;

(h) has a medical director who assumes overall responsibility for medical care and an administrator with responsibility for the day to day management of the hospice;

(i) maintains clinical records;

(j) uses volunteers to provide administrative or direct patient care equal to a minimum to 5% of the total patient care hours provided by paid employees and contract staff;

(k) provides an ongoing training program for employees to ensure the quality of care;

(l) continues to provide care to Medicare beneficiaries even if benefits are exhausted;

(m) operates in conformity with health and safety requirements established by HHS and is licensed in the State (if applicable).

#### What services are covered under Medicare?

Medicare will cover the following items when furnished under a written plan of treatment by a certified hospice provider to an eligible beneficiary. Listed below are core services which must be provided directly by hospice employees. Other services may be provided under arrangements with other outside agencies or organizations.

*Physician services;*

*Nursing services;*

*Medical social services;*

*Counseling services* (including chaplaincy, and nutritional guidance);

*Home Health Aide* — Homemaker Aides — volunteers;

*Physical therapy, occupational therapy and speech-language pathology;*

*Medical supplies and equipment* (including drugs and biologicals used for symptom control);

*Short-term inpatient care* for pain control or acute or chronic symptoms management;

*Short-term inpatient care* to provide respite for family or others caring for the individual at home.

*Bereavement services* must be provided as a

part of counseling services but are not reimbursible. (The bereavement program is preventive, not therapeutic).

#### Who is eligible for the Hospice Benefit?

All Medicare Part A beneficiaries are eligible for hospice care *if*:

• The attending physician (for initial certification only) and/or a hospice physician certify a patient is terminally ill with a life expectancy of six months or less, *and*

• The patient has elected to receive hospice services (The patient (or his representative when authorized in accordance with state law) signs an election statement); (The election statement must indicate the patient's awareness of the nature of hospice care, i.e., palliative, not curative care) and the particular Medicare benefits being waived by electing hospice care — (a) any care related to terminal illness which is not arranged for through the designated hospice; and (b) curative services for the terminal condition.

*(Please turn to page 176)*

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TABLE 1  
MEDICARE COVERED BENEFIT UNDER

Service Item	Hospice	Home Health Agency	Hospital
Continuous care at home during periods of crisis	Yes	No	No
Personal comfort items	Yes	No	No
Counseling services at home for both the patient and family	Yes	No	No
Homemaker Services	Yes	No	No
Volunteer services must be available	Yes	No	No
Drugs for pain and symptoms control to be used at home	Yes	No	No
Services covered whether or not the patient is homebound	Yes	No	N/A
Inpatient care to provide respite for family or other care giver	Yes	No	No
Care must continue even if benefits run out	Yes	No	No
Deductibles waived	Yes	No	No

### When the patient chooses to have hospice care, does this decision affect other Medicare benefits?

Yes, unlike other Medicare benefits, the hospice alternative is designed to be a single source for the health care services which must be "elected" in lieu of regular Medicare coverage. Except for charges submitted by the patient's own physician, Medicare will pay only

the hospice for services related to the patient's terminal illness. Services related to other illnesses or injuries continue to be covered under Medicare. Many items and services are covered under hospice that are not covered through any other type of facility or provider. Table 1 shows a comparison of certain service items and their coverage by provider type.

Hospice care in the United States can be found in free standing institutions and in hospitals, on mixed medical wards and in separate specialized units and predominately in the home. The hospice movement in the United States has grown from only 1 program in 1974 to some 1,200 by January 1, 1984, with many more in the planning stages.

Twenty-two hospice programs in Iowa were contacted during the months of September and October to determine their interest in participating in the Medicare Program. Only 3 out of the total number decided to pursue certification at the onset. A number of other agencies expressed interest but indicated they were not ready and would apply at a later date. At present, Hospice of Central Iowa in Des Moines is certified. The certification of another Hospice agency is pending and several other agencies are scheduled for initial survey.

Although it is evident the Hospice regulations pose major hurdles to Medicare certification for most Hospice programs, the success of the hospice movement confirms the fact that the hospice concept is a needed viable alternative which should be available. Enactment of the Medicare hospice benefit is a tangible demonstration of support for increasing the options and assistance available to the terminally ill.

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## February 1984 Morbidity Report

Disease	Feb. 1984 Total	1984 to Date	1983 to Date	Most Feb. Cases Reported From These Counties
Amebiasis	1	5	0	Boone
Brucellosis	1	1	0	Tomo
Chickenpox	1047	1562	1653	Scattered
Compylobacter	8	27	32	Scattered
Cytomegalovirus	0	4	4	
Eaton's Agent infection	1	4	65	Linn
Encepholitis, viral	1	2	6	Hamilton
Erythema infectiosum	0	0	10	
Gastroenteritis (GIV)	2946	4129	4042	Scattered
Giordiosis	14	30	33	Scattered
Hepatitis, A	3	6	5	Iowa, Jackson, Muscatine
Hepatitis, B	11	21	8	Scattered
Hepatitis, Non A-B	0	4	3	
Hepatitis type unspecified	0	1	3	
Herpes Simplex	76	123	143	Scattered
Herpes Zoster	0	0	3	
Histoplasmosis	0	0	3	
Infectious mononucleosis	24	38	58	Scattered
Influenza, lab confirmed	52	53	37	Scattered
Influenza-like illness (URI)	13972	17142	11937	Scattered
Legionellosis	0	0	1	
Malaria	1	1	1	Polk
Meningitis aseptic	3	5	12	Johnson, Linn
bacterial	8	25	28	Scattered
meningococcal	4	12	4	Linn, Osceola, Polk
Mumps	6	7	26	Scattered
Pertussis	0	3	2	
Robies in animals	14	22	33	Scattered
Reye Syndrome	0	0	0	
Rheumatic Fever	0	0	0	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmonellosis	12	37	25	Scattered
Shigellosis	4	11	7	Benton, Dubuque, Muscatine, Woodbury
Tetanus	0	0	0	
Toxic Shock Syndrome	2	3	3	Dubuque, Linn
Tuberculosis total ill	5	9	16	Allamakee, Polk, Winnebago
bact. pos.	2	6	13	Allamakee, Polk
Typhoid Fever	0	0	0	
Veneral diseases: Gonorrhea	371	713	674	Scattered
Syphilis	2	5	2	Polk
Other Non-Reportable Diseases: Toxoplasma — 1, Johnson, 1, Polk.				

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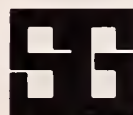
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UNIVERSITY OF ARIZONA COLLEGE  
OF MEDICINE  
TUCSON, ARIZONA

**TOPIC:** “RISK FACTOR MODIFICATION  
IN PREVENTION OF PRIMARY  
CORONARY ARTERY DISEASE”

**ROBERT L. FELDMAN, M.D.**  
ASSOCIATE PROFESSOR OF MEDICINE  
(CARDIOLOGY)  
UNIVERSITY OF FLORIDA COLLEGE  
OF MEDICINE  
GAINESVILLE, FLORIDA

**TOPICS:** “LASER THERAPY OF CORONARY  
ARTERY DISEASE”  
AND  
“UNSTABLE ANGINA”

**MAHENDR KOCHAR, M.D.**  
ASSOCIATE PROFESSOR OF MEDICINE  
AND PHARMACOLOGY  
MEDICAL COLLEGE OF WISCONSIN  
MILWAUKEE, WISCONSIN

**TOPICS:** “BETA BLOCKING AGENTS  
IN HYPERTENSIVE CARDIOVASCULAR  
DISEASE”  
AND  
“WHO SHOULD RECEIVE BETA  
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MAYO MEDICAL SCHOOL  
ROCHESTER, MINNESOTA

**TOPICS:** “PROLAPSING MITRAL VALVE”  
AND  
“NON-INVASIVE DIAGNOSTIC TESTS  
FOR CORONARY ARTERY  
DISEASE”

**LEON RESNEKOV, M.D.**  
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# News About Colleagues

## ABOUT

## IOWA PHYSICIANS



**Dr. John Martin** recently was named Clarinda Citizen of the Year. Dr. Martin received the M.D. degree at Northwestern University. Following World War II, he helped set up the neurosurgery department at Walter Reed Hospital in Washington, D. C. Later he joined in medical practice with Dr. Lowell Davis, stepfather of Nancy Reagan, the President's wife. He is a collector of rare medical books which he has donated to the University of Iowa where a special room is named in his honor. . . . **Dr. Lee A. Harker**, professor of Otolaryngology and Head and Neck Surgery at the U. of I.

College of Medicine, recently was appointed vice chairman of the Department.

New officers of the Iowa Dermatological Society are **Dr. Randall R. Maharry**, Des Moines, president; **Dr. Sophocles Marty**, Mason City, vice president; and **Dr. Warren Piette**, Iowa City, secretary-treasurer. . . . **Dr. Carol A. Aschenbrener** recently was named associate dean for Medical Student Affairs and Curriculum, a post she has held on an interim basis since September 1, 1983. Dr. Aschenbrener succeeds **Dr. George L. Baker**, former trustee

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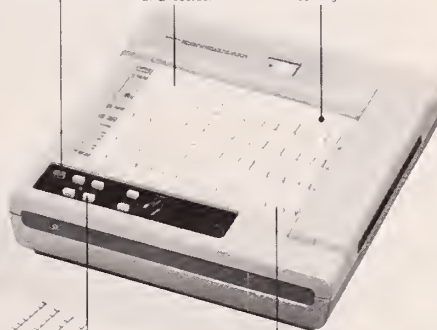
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of the Iowa Medical Society. Dr. Aschenbrener received the M.D. degree at the University of North Carolina College of Medicine in Chapel Hill, North Carolina, and served her pathology residency at the U. of I. College of Medicine. . . . At a recent meeting of the Hamilton County Medical Society, **Dr. Eduardo Reveiz** was elected president; **Dr. Kie Yun Lee**, vice president and **Dr. Joseph X. Latella**, secretary-treasurer. All are Webster City physicians. . . . **Dr. Robert Rakel**, professor and head of the Department of Family Practice at the U. of I. College of Medicine, has authored a book entitled **TEXTBOOK OF FAMILY PRACTICE**.

**Dr. James D. Kimball** recently received a special Chamber of Commerce award from the Osceola CC for his community involvement. Dr. Kimball has served on the Parks and Recreation Board, Clarke Community School Board and as director of the Osceola State Bank. He is a past president of the medical staff at Clarke Community Hospital; chairman of the utilization review, infection control committee and medical records committee. Dr. Kimball has practiced in Osceola since 1968. He recently accepted a faculty position at Broadlawns Medical Center in Des Moines. . . . **Dr. Thomas L. Duncan** will join Medical Associates in LeMars in July. Dr. Duncan received the M.D. degree at Creighton University School of Medicine and is completing his family practice residency at St. Joseph's Hospital in Mason City. . . . **Dr. Vincent Carstensen**, Waverly, recently was recognized by the Waverly Chamber of Commerce. Dr. Carstensen has been active in community affairs since locating in Waverly in 1947. He has served as chairman, Chamber Development Committee; Chamber board member; chief of staff, Waverly Hospital; he has received the Iowa High School Athletic Association's Team Physician Award. A Waverly native, Dr. Carstensen recently retired from his medical practice. . . . **Dr. Mira Tomasevic** recently began family practice in Zearing. Dr. Tomasevic received her medical education at Medical University in Zagreb, Yugoslavia, and served a pathology residency at Children's Memorial Hospital; Lutheran Park Hospital and Columbus-Cuneo-Cabrini Medical Center in Chicago, Illinois. Dr. Tomasevic has been in private practice in Chicago.



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MANAGEMENT FOR THE HEALTH PROFESSIONS

**Dr. Robert E. Pucelik**, Independence, has been named medical director of the chemical dependency unit at Schoitz Medical Center in Waterloo. Dr. Pucelik is a former medical director of the alcohol and drug abuse treatment unit at the Independence MHI.

## DEATHS

**Dr. Frederick C. Brush**, 66, Mason City, died January 31 at a Mason City hospital. Dr. Brush received the M.D. degree and served his urology residency at the U. of I. College of Medicine. He began medical practice in Mason City in 1949. Dr. Brush was a clinical associate professor at the U. of I. and served 3 tours on the Project Hope Ship. A World War II veteran, Dr. Brush was a member of the Urological Society of Iowa and board member for Camp Gaywood in Clear Lake.

## CLARKSON MEDICAL LECTURE SERIES



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#### Topics include:

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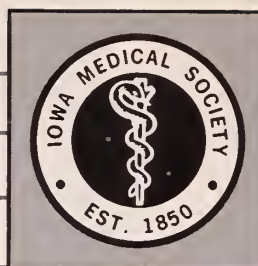
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A Monthly Commentary

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## IN THE PUBLIC INTEREST

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### If I'd Known Then . . .

**F**OR OUR *University Issue*, IOWA MEDICINE asked 8 alumni of the College of Medicine to answer this question: *As you remember the medical school curriculum and your residency program, what topics or skills do you wish had been included, in addition to those you were taught at Iowa?* Here are their responses.

**John Ebensberger**, *Greene (M.D. 1978, family practice residency 1981)*: "In my early days of practice I wished I'd had opportunity to learn more than I knew right then about pediatric development and behavioral problems, which I can't remember being discussed. And the lack of instruction in business management made for a painful first couple of years."

**Sterling Laaveg**, *Mason City (M.D. 1973; surgery residency 1978)*: "I wish there might have been more emphasis on problem-solving in my medical school years, rather than learning facts. There could have been more emphasis in my residency on acquiring technical skills, and on how to deal with Workers' Compensation questions. I really have no major complaints about my educational experience at Iowa."

**Paul Rohlf**, *Davenport (M.D. 1962, urology residency 1969)*: "Material in 3 areas: sexual function and dysfunction; cost factors — appreciation of what it costs to run every test on a patient, in the search for completeness; and some time spent in reflection, or some course material, on ethical questions — not to solve them, but to bring them to awareness . . . discussing how much the public thinks should be done for the 85-year-old who has a massive stroke, for instance — questions of a medical-ethical-religious character. I don't know where we would have fit those in, or what we'd have cut out for them, but they'd have been very helpful to me."

**Sherry Bulten**, *Humboldt (M.D. 1978, family practice residency 1981)*: "I wish I had put more residency effort into learning behavioral science and counselling theory. I think they need a different approach to teaching time management, so young physicians can learn how to avoid turning into workaholics — how to keep from having our practices rule us, rather than our ruling them. There are practical things it would be nice to know, like how to find an answering service in a small town, rather than just 'don't list your phone number.'"

**Craig Champion**, *Iowa City (M.D. 1962, internal medicine residency 1969)*: "My residency training is of course least remote in my mind. It was most beneficial and covered an incredible amount of stuff. We were well trained in all the traditional areas of medicine. I could have used more training in office gynecology and dermatology. Also nonfracture orthopedics . . . backs, shoulders and knees. And possibly some ophthalmology . . . foreign bodies, conjunctivitis, iritis. . . ."

**Ruth Langstraat**, *Spencer (M.D. 1976, internal medicine residency 1979)*: "Nutritional information! And medical-legal processes — working with attorneys, giving depositions, that sort of thing was real foreign to me at first, and I hated it. And office organization and procedures — I'm sure these are covered in more depth in the family practice residencies, but I wasn't too well prepared for office practice. On the other hand, I've found that I've been especially well prepared to keep good documentation on my patients."

April 1984

Iowa Medicine



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**Precautions:** In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

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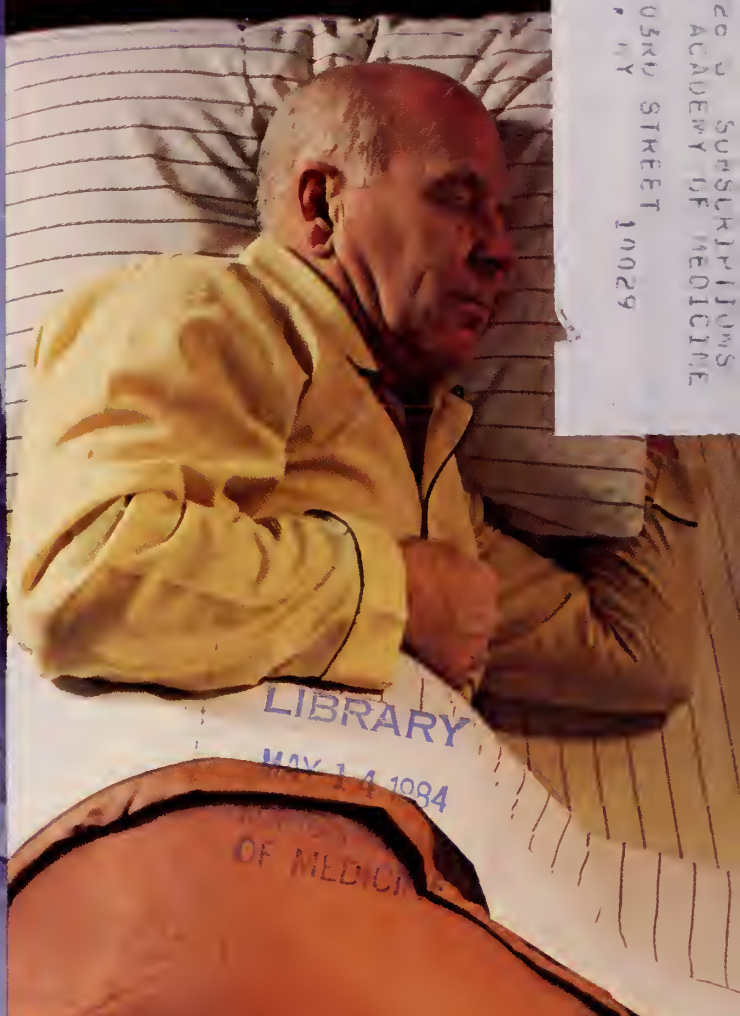
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ASSESSMENT OF 1983 LEVELS    AMONG IOWA YOUNGSTERS — See Page 221

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# Iowa Medicine

Volume 74 Number 5

Journal of the Iowa Medical Society

## REGULAR FEATURES

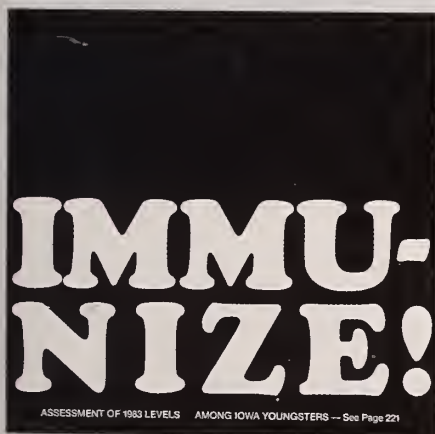
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## ABOUT THE COVER

**Iowa Medicine**  
Journal of the Iowa Medical Society



Six years ago the Iowa immunization law took effect. Since then immunization levels have risen dramatically and they have been followed by a correspondingly sharp decrease in the incidence of immunizable diseases. This month's cover focuses attention on this subject. On pages 212 and 213 the Iowa State Department of Health provides an assessment of 1983 immunization levels among urban and rural school children in Iowa.

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## PRESIDENT'S PRIVILEGE

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**T**RADITION, AS TEVYE SAYS in *Fiddler on the Roof*, is important in the process of life. So it is — this month the office of president of the Iowa Medical Society moves to a worthy colleague and friend. Dr. John Tyrrell of Manchester has the privilege and responsibility of becoming principal spokesman for Iowa medicine in 1984-85.

I offer my deepest thanks for the honor of the IMS presidency these past 12 months. I appreciate the excellent support of my fellow physicians on the Board of Trustees and Executive Council. And I am very grateful to all of the Iowa physicians who give of their time, energy and resources to IMS endeavors.

The issues affecting medical care delivery continue even though the officers change. The mandates of our House of Delegates provide the direction we will take. It is the task of the president and other officers to implement the policies set by those who serve in the House and the challenges are great.

Depending on how the 1984 IMS House of Delegates acts (this is prepared prior to its meeting), we may embark on a significant new professional liability journey. We will have a further indication of how Iowa physicians view the voluntary fee freeze requested of them. We will have a further comment on the subject of

medical manpower. We will have an additional expression from Iowa medicine about competition, marketing and new delivery concepts.

As is the *tradition*, I leave my successor with many important activities still in process. I hope to continue to be of service to him and to the Iowa Medical Society. I hope you will join in support of the work before us.

Again, I want to thank you for the many courtesies extended to me this year. I am honored to join the ranks of those distinguished Iowa physicians who have been president of this organization. May God watch over all of you during the challenging and troubled times ahead.

A handwritten signature in dark ink that reads "Erling Larson M.D." with a stylized flourish at the end.

Erling Larson, M.D.  
President



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HOSPITAL STAY”  
AND  
“PARENTERAL VS ORAL  
DRUG THERAPY”**

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D.R.G.’S”  
AND  
“KEYS TO SUCCESSFUL  
IMPLEMENTATION OF D.R.G.’S”**

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## QUESTIONS AND ANSWERS



### IFMC & NURSING HOMES

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*The Iowa Foundation for Medical Care is responsible for assessing the quality of medical care furnished to Iowa nursing home residents. Dr. Brinkman provides leadership in this area. He comments here on the matters of drug utilization, current diagnoses, etc.*

---

#### **How long has the Iowa Foundation for Medical Care been evaluating quality and medical necessity for care in Iowa nursing homes?**

The IFMC began nursing home review in 1978. Now, under contract with the Department of Human Services, the Foundation is responsible for the evaluation of all Medicaid recipients in skilled care facilities, swing-bed facilities, intermediate care facilities, and intermediate care facilities for the mentally retarded. We also have a private contract with 3 Title 18 facilities. We review approximately 18,000 residents under these contracts. This covers about half of the 35,000-40,000 residents in Iowa nursing home facilities.

#### **What are the goals of the IFMC's nursing home review program?**

The goals are three in number. We seek to assure quality care for Iowa nursing home residents. In doing so, we are developing significant information about this predominantly geriatric population. This not only helps us in our efforts, but it also advises others on what is acceptable quality of care, not only for Iowa but for the nation. A second commitment we have is to provide demographic data for use in plan-

ning future nursing home facilities, as well as recommended payment levels for the Department of Human Services.

#### **Have you noted particular problems in evaluating nursing home care over 5 years?**

Frequently, a resident stays in a nursing home for many years. Sometimes the medical record and diagnosis are not updated from the time of entry into the nursing home. Therefore, when we study the use of diuretics, for instance, and the patient was admitted to the home with the diagnosis of organic brain syndrome, one has difficulty justifying the use of diuretics. When a new drug is given, if the diagnosis or reason for the drug is noted in the record, it will save the physician, the nursing home, and the Foundation significant time in documentation.

#### **Is there over-use of drugs in the elderly? Do you have any feel for what is happening to Iowa nursing home residents?**

In a 1983 survey conducted by the IFMC, approximately 20% of Iowa residents were found to receive 10 or more drugs on any given day. This is of particular concern to the elderly because of impaired hepatic metabolism of many drugs and decreased renal clearance. Frequently, 25% of the dosage is estimated to be all that is necessary to maintain a therapeutic level for the elderly population.

#### **We understand the IFMC has a sophisticated data base covering approximately 18,000 nursing home residents receiving Iowa Medicaid. Are there any other particular areas you are currently evaluating?**

Yes, we are all concerned about drug interactions regardless of the patient age. It becomes

*(Please turn to page 208)*

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# Precipitating Events In Diabetic Ketoacidosis

MARGARET A. ECKSTEIN, M.D. and

CHARLES M. HELMS, M.D., Ph.D.

Iowa City, Iowa

1980 there were 465 DKA admissions to University Hospitals, for an average of about 34 per year. Recently, we have been reviewing the University Hospital experience with DKA. We present here brief observations on predisposing events made as a result of that review.

---

*A review of the hospital records of 50 adult and 50 pediatric patients admitted with diabetic ketoacidosis. Infection occurred in 33% of the episodes in adults and 26% of the episodes in children. Twenty-seven percent of the adult episodes and 9% of the pediatric episodes were associated with discontinuance or reduction in insulin dosage. In 49% of adult episodes and 65% of the pediatric episodes, a precipitating cause could not be identified. Further research to identify the cause or causes of DKA episodes without obvious precipitating cause is indicated.*

---

**D**IABETIC KETOACIDOSIS (DKA) is a life threatening and not infrequent complication of diabetes mellitus. Since the introduction of insulin therapy, the case-fatality rate in DKA has dropped dramatically and in recent years newer modes of administering insulin in DKA have been introduced.

DKA continues to be a common cause of admission to University of Iowa Hospitals and Clinics. Between July, 1966 and November,

---

Dr. Eckstein is associated with the Euclid Clinic Foundation, Euclid, Ohio. Dr. Helms is an associate professor in the Department of Internal Medicine, U. of I. College of Medicine, Iowa City, Iowa.

## METHODS

The medical records of 50 adults (patients  $\geq 18$  years) and 50 children ( $< 18$  years) were selected for review from a computer-generated list of DKA discharge diagnoses.

Criteria applied for the diagnosis of DKA were ketonemia, hyperglycemia (blood glucose  $\geq 150$  mg/dl), blood  $\text{CO}_2$ -combining power of less than 15 mEq/liter, and arterial pH of less than 7.35. Using these criteria, there were 65 adult admissions for DKA and 54 pediatric admissions for DKA from the 50 patients in each group. Clinical and laboratory records of all patients were reviewed and information transferred to flow sheets for analysis.

## RESULTS

*Diabetic Populations Examined.* The mean ages of adult and pediatric diabetic groups were 35 and 10 years, respectively. Females outnumbered males in both diabetic populations examined. In the adult group the female to male ratio was 30:20 (1.5:1.0) and in the pediatric group 32:18 (1.8:1.0).

Of the 50 adult patients admitted with DKA,

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SCIENTIFIC PRESENTATION FOR THE MONTH OF MAY 1984

TABLE I  
PRECIPITATING EVENTS IN EPISODES OF  
DIABETIC KETOACIDOSIS

	Adult Episodes (n = 65)	Pediatric Episodes (n = 54)
Infection alone	16 (25%)	14 (26%)
Reduction in insulin dosage	12 (19%)	5 (9%)
Both infection and reduction in insulin dosage	5 (8%)	0 (0%)
No event identified	32 (49%)	35 (65%)
New onset of diabetes	6	12

14 (28%) had diabetic complications. There were 12 patients (24%) with uncharacterized retinopathy, 9 (18%) with neuropathy, 8 (16%) with a previous diagnosis of nephropathy and 5 (10%) with peripheral vascular disease. There were no diabetic complications noted in the 50 patients admitted who were less than 18 years of age. Two patients in each age group died for a case-fatality rate of 4%.

*Predisposing Factors.* Precipitating events among patients admitted with DKA are summarized in Table I. Infection was the most common precipitating event identified in both adult and pediatric groups. In the adult group, 21 (33%) of the episodes of DKA were associated with infection. Sixteen of these episodes were associated with infection alone. There were 12 culture-proven bacterial infections: 4 of the urinary tract, 2 of pilonidal cysts, 2 soft tissue infections of the toe and single cases of furunculosis, inguinal abscess, pneumonia and shigellosis. There were 2 fungal infections (both vaginal candidiasis) and 7 clinically diagnosed viral infections of which 4 were classified respiratory and 3 gastrointestinal.

Fourteen pediatric DKA patients (26%) had infections noted on admission. Seven of these were culture-proven bacterial infections: 2 urinary tract infections, and single cases of otitis media, streptococcal pharyngitis, tonsillitis, furunculosis and hidradenitis suppurativa. A single case of vaginal candidiasis was seen. Six cases of clinically diagnosed viral infection were found. The viral infections were equally divided between respiratory and gastrointestinal systems. One case of measles was identified.

The next most common precipitating event identified was reduction in insulin dosage.

There was a difference between adult and pediatric groups in respect to alteration of insulin dose. In the adult group, 17 episodes (27%) were associated with a discontinuation or reduction in insulin dosage prior to the onset of DKA. In 12 episodes (19%), this reduction was the only precipitating factor recognized. A similar history of dosage reduction was recorded in only 5 episodes (9%) in the pediatric group.

There were 5 adult episodes (8%) in which it was noted that the insulin dosage had been decreased and that the patient was infected.

Interestingly, 49% of adult and 65% of pediatric cases of DKA occurred without an obvious recorded predisposing cause. All 6 episodes of new onset DKA in the adult group, and 12 of 14 episodes of new onset DKA in the pediatric group fell into this category. No episodes of DKA precipitated by myocardial infarction were identified.

*Signs of Infection.* The records for adult DKA admissions were reviewed for signs and laboratory data which might facilitate differentiation of infected from uninfected patients. Data are summarized in Table II. Fifty-two (80%) of the 65 adult episodes of DKA were associated with leukocytosis ( $WBC \geq 10,500/mm^3$ ) and 10 episodes (15%) with a left shift of granulocytic precursors ( $\geq 10\%$  bands). The median white blood cell (WBC) count in all adult cases was 14,600 per cu. mm. Of the 21 episodes of DKA associated with infection, 15 (71%) had leukocytosis with a median WBC count of 14,600 per cu. mm. In only 2 episodes (10%) of infection was there a left shift or fever ( $T > 38.3^\circ C$ ). Only one patient of the 12 with bacterial infection had leukocytosis with a left shift and fever. This patient had shigellosis. The second patient with fever and leukocytosis with left shift was felt to have viral gastroenteritis. There were 8 other episodes of DKA associated with leukocytosis and left shift and these occurred without fever and without documented infection.

Similar results were found in the other categories of precipitating events for DKA. Of the 17 episodes of DKA associated with reduction in insulin dosage, 12 (71%) had leukocytosis and 2 (12%) had a left shift. Twenty-five (93%) of the DKA patients without an obvious predisposing event had leukocytosis and 6 (22%) had a left shift.

There were 2 deaths in the adult population



examined. The probable cause of death in both patients was sepsis. There were also 2 deaths in the pediatric population. Both of these patients died from elevated intracranial pressure and subsequent brain herniation (cerebral edema).

#### DISCUSSION

The recognized precipitating events of DKA in both adult and pediatric populations examined were infection and reduction in insulin dosage. In 8% of adult DKA episodes, both of

It is evident from the results of this study the absence of fever in a DKA patient on admission does not exclude underlying infection. Moreover, one cannot assume a direct correlation between leukocytosis and infection in patients with DKA. On the other hand, the 2 patients with fever did have infection. Therefore, it is possible fever may be a distinguishing, if insensitive, clinical finding in the infected DKA patient upon admission. The history of a reduction in insulin dosage or discontinuance of insulin therapy would also be

TABLE II  
CLINICAL AND LABORATORY SIGNS OF INFECTION IN ADULT CASES OF DKA

	No. of Episodes	WBC $\geq$ 10,500/mm <sup>3</sup>	WBC $\geq$ 10,500/mm <sup>3</sup> $\geq$ 10% Bands	T $>$ 38°C
All episodes	65 (100%)	52 (80%)	10 (15%)	2 (3%)
Infection	21 (100%)	15 (71%)	2 (10%)	2 (10%)
Bacterial	12	9	1	1
Fungal	2	2	0	0
Viral	7	5	1	1
Decrease in insulin dosage	17 (100%)	12 (71%)	2 (12%)	0
No precipitating event identified	27 (100%)	25 (93%)	6 (22%)	0

these precipitating events were involved. Similar findings have been noted in other studies with infection being present in 18 to 31% and a decrease in insulin in 13 to 27% of the patients evaluated.<sup>1, 2</sup> Strikingly, no precipitating event was evident in nearly half of the adult episodes and in nearly two-thirds of the pediatric episodes. Clearly, our knowledge of the precipitating events of DKA is far from complete. Further research in this area is warranted in hopes of adding knowledge leading to a better understanding of the mechanisms precipitating DKA and possible prevention of DKA episodes.

The median white blood cell count in all adult patients was 14,600 per cu. mm., identical to that found in patients with infection. Only 2 of the 21 episodes with documented infection were associated with a left shift of neutrophilic precursors. The same 2 episodes were also associated with fever. No uninfected patient was febrile. Thus, although infection may be present, fever, an important manifestation of infection, is infrequently seen. To further confound diagnosis, leukocytosis, another manifestation of infection, frequently is found even in uninfected DKA patients.

helpful in determining an etiology for an episode of DKA.

In conclusion, among patients at our hospital who are admitted with DKA, infection and/or a reduction in insulin dosage are the usual precipitating factors identified. In the initial evaluation, leukocytosis, with or without left shift, is not predictive of infection. However, fever, if present, appears to raise the likelihood of infection. A striking number of DKA episodes are precipitated by a factor or factors which go unrecognized.

#### ACKNOWLEDGEMENT

The authors express their gratitude to Drs. Robert Bar, Robert Hardin, Barry Sherman and Robert Thompson for their helpful criticism of the manuscript.

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# CT Adapted Stereotaxy

P. W. HITCHON, M.D., T. T. WILKINSON, M.D.,  
S. K. JACOBS, M.D., C. G. JACOBY, M.D., and  
J. C. VANGILDER, M.D.

Iowa City, Iowa

---

*New and less-threatening approaches to diagnosis and treatment are emerging in the CT era. Described here is the use of CT adapted stereotaxy among 10 patients at the University of Iowa. It is considered a precise way to establish histological diagnoses of lesions within the cranial cavity.*

---

**O**FTEN THE MANAGEMENT of solitary and multiple brain lesions is perplexing and challenging. This is particularly so when the physician confronts a single small lesion located deep in the brain or in the eloquent or motor areas.

It must be acknowledged that multiple lesions are not always of metastatic origin, particularly when no other primary malignancy has been identified. Furthermore, a solitary brain tumor often may present on coaxial tomographic scanning (CT) with a lucent center and enhancing periphery, features that are considered characteristic of brain abscess. For these reasons it was apparent a surgical technique would be developed eventually to derive information from the CT scan and allow for the biopsy of tumors and drainage of cysts

through a small trephine under local anesthesia. It is with the above needs in mind that stereotaxy adapted to coaxial tomography was conceived.<sup>2, 3</sup>

## MATERIALS AND METHODS

The CT adapted stereotaxic device utilized at the University of Iowa Hospitals is the Brown-Roberts-Wells stereotaxic guide.\* Since January, 1983, CT stereotaxy has been used to confirm the diagnosis in 10 patients with both solitary and multiple brain lesions. Each patient has had a full diagnostic workup consisting of skull x-rays, CT scan, and where appropriate, nuclear brain scanning and angiography. When metastatic disease was suspected, possible primary malignancy was investigated. The extent of workup varied in accordance with the referring service. Having failed to establish the diagnosis of the intracranial lesion, the patient was considered for biopsy. Stereotaxic biopsy was most appropriate where the lesion(s) was (were) less than 2



Figure 1. Patient on CT table with base ring and localizing ring in place.

\* Radionics, Inc., Burlington, Mass. 01803.

The authors are associated with the Department of Surgery, The University of Iowa Hospitals and Clinics.

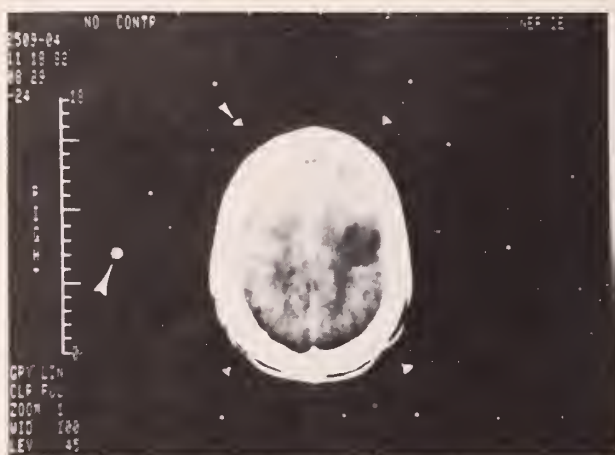


Figure 2. CT scan shows lucent tumor in left frontal lobe. Large arrow (pointing upwards) indicates position of large vertical rod of localizing ring present on patient's right. Smaller arrow (pointing downwards) indicates one of 4 vertical posts that fixate the stereotaxic ring to the skull.

cm or located in the basal ganglia, motor area, or frontal operculum of the dominant hemisphere.

Patient preparation for this procedure is similar to any conventional operation, excepting the scalp may be shaved over a small area only where the trephination is to be located. The base ring of the stereotaxic guide is fixed to the skull under local analgesia by means of 4 pins. The localizing ring harboring a total of 9 carbon-fiber rods, 6 vertical and 3 diagonal, is

attached to the base ring for computerized scanning (Figure 1). Several slices are obtained through the lesion of interest. The rods of the localizing ring are transected by the plane of the tomogram such that a small dot appears at the point of intersection of the CT plane with each rod of the localizing ring (Figure 2). Using software available with most commercial CT scanners, a computation is made of the X and Y coordinates of the 9 points of intersection and the region to be biopsied. The points of intersection of the CT plane with the 3 diagonal rods of the localizing ring allow for the position of the lesion to be determined with respect to the "Z" axis. The linear coordinates (X, Y, Z) are now converted into angular coordinates.

While processing the data from the scan, and computing the angular or polar coordinates, the patient is transferred to the operating room and the localizing ring is replaced by the arc system. The coordinates are then set on the arc system and through a trephine selected by the surgeon, the lesion is biopsied. The stereotaxic system also includes a phantom base to confirm the accuracy of the calculations. The stereotaxic biopsy may be performed under fluoroscopic monitoring. This may help in evaluating cystic lesions by injecting a contrast material or air after drainage. The tissues obtained with the biopsy forceps, usually 1-2 mm in size, are subjected to frozen section. Several biopsies may be necessary

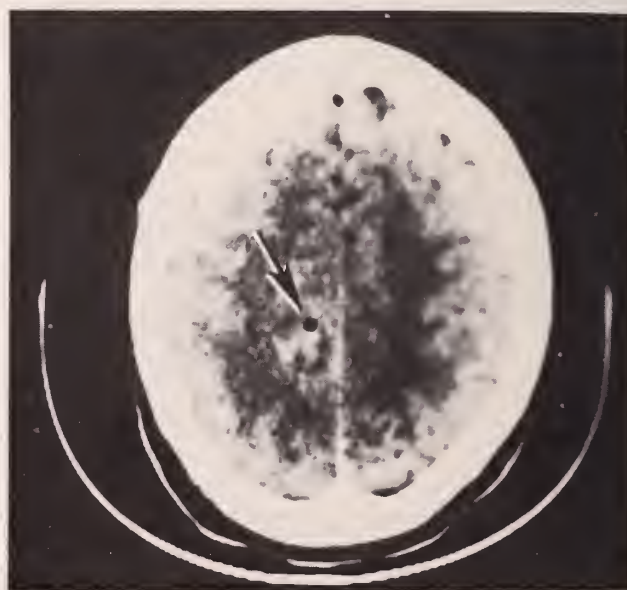
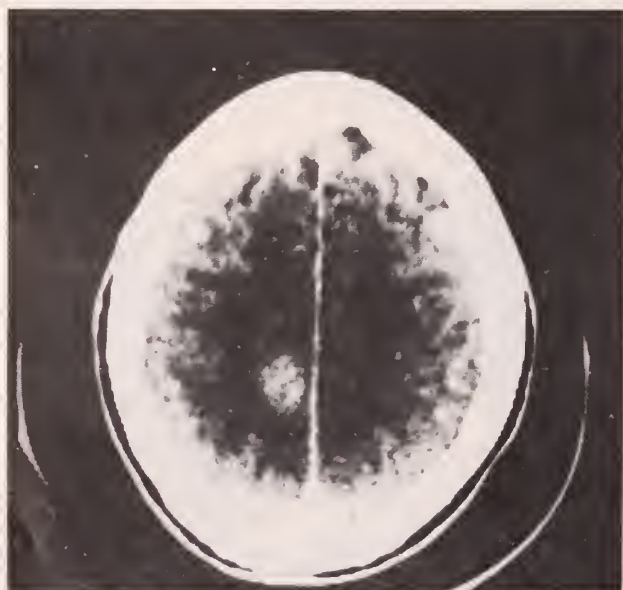


Figure 3. Preoperative (a) and postoperative (b) scans of patient with left parasagittal tumor. Postoperative scan shows small amount of air (arrow) at site of biopsy.



from each quadrant to satisfy the pathologist and establish a diagnosis.

#### RESULTS

CT adapted stereotaxic biopsy is reported for 10 patients. There were 4 gliomas, 3 patients with metastatic disease, 2 abscesses, and one case of a colloid cyst of the third ventricle. The pathology of the metastatic tumors was that of adenocarcinoma in 2 and carcinoma in 1. The 2 abscesses drained using this technique yielded no organisms; however, both patients had been on antibiotics for several weeks for *Staphylococcus aureus* bacteremia in one and *Pseudomonas sepsis* in the other. The only technical failure occurred in a patient with a colloid cyst of the third ventricle producing hydrocephalus. Attempted aspiration of the contents of the cyst, which measured 1.5 cm in greatest diameter, failed owing to the tenacity of the cyst contents. The average operating time for this procedure was under 2 hours. Local anesthesia was used throughout. There were no complications and no deterioration in neurological status.

To confirm technique accuracy, a postoperative CT scan was obtained in all patients within 2 days from surgery. The site of biopsy was identifiable in the majority of cases by a small, insignificant hematoma, or a droplet of intracranial air introduced at the time of surgery. Figure 3 shows the pre and postoperative CT scans of a patient with an astrocytoma in the parasagittal white matter of the left parietal lobe. The scan in (b) shows a small hematoma within the tumor where the biopsy was taken, as a few droplets of air. Having established the diagnosis in a patient who was neurologically intact, radiation was initiated, and chemotherapy was started later. With conventional surgery, the patient most likely would have developed right hemiparesis postoperatively.

#### DISCUSSION

CT adapted stereotaxy offers a precise way to establish histological diagnoses of lesions within the cranial cavity. Stereotaxic biopsy has been shown to be a safe procedure in large series, both in Europe<sup>5, 6</sup> and this country,<sup>1, 4</sup> with a morbidity of 3% or less. Several devices are on the market for use in stereotaxy with CT derived coordinates. The Leksell,<sup>2, 4</sup> Riechert<sup>5, 6</sup> and Brown-Roberts-Wells<sup>1</sup> are such devices. They have been adapted specifi-

cally for use with computerized axial tomography. In addition to the biopsy of tumors and drainage of cysts, this technique allows for the introduction of radioactive seeds for interstitial brain tumor irradiation.<sup>1, 4, 5, 6</sup> This has been performed extensively in Europe for many years,<sup>5, 6</sup> and more recently in this country.<sup>1, 4</sup> Whether the CT scanner will facilitate the performance of stereotaxy for pain and movement disorders remains to be seen. We anticipate that with the availability of intraoperative evoked response averagers, CT adapted stereotaxy for pain and dyskinesia will eventually become a reality.

The incurable nature of malignant gliomas is definitely an incentive for the development of new techniques to control their growth and dismal outcome. More nationwide investigation needs to be made of interstitial tumor bed irradiation, either temporary or permanent. Furthermore, movement disorders and intractable pain, though of benign etiology, may be so severe to totally incapacitate an individual and render him disabled. It is for these reasons that CT adapted stereotaxy, with its low morbidity in experienced hands, will find a multitude of applications and prove itself worthy of renovation.

#### ADDENDUM

Since the submission of this manuscript, 13 additional patients have undergone CT-stereotaxic biopsies. The results remain consistent in terms of accuracy and morbidity.

#### ACKNOWLEDGMENT

The authors acknowledge the advice and technical assistance of Mary Burr, Dixie Yoder and Cindy Clark.

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# Public Fervor Absent On Malpractice Hikes

DAN LANGFIELD  
Cedar Rapids, Iowa

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*Should not the cause of health care cost include a hard look at sharply rising professional liability premiums? This question is central to this examination of factors associated with the so-called health care cost spiral. The author gives a current perspective.*

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**S**OME INTERESTING FACTS have surfaced in the print media lately. They are fascinating, even compelling.

**Item:** "Blue Cross cites savings, cuts rates!"

**Item:** "Iowa, you deserve a medal for holding the line on your use of health care — in fact, we intend to see you get \$24,000,000 worth of credit." — Blue Cross

**Item:** "Medical costs, soaring at a double-digit pace in the four previous years, rose 6.4%, the smallest advance in a decade, according to the Labor Department report on the Consumer Price Index."

**Item:** "Cost of malpractice insurance to soar for half of Iowa's doctors. Malpractice insurance costs for the Aetna Casualty and Surety Company will rise an average of 32%."

All four items appeared in one-week in mid-January. Blue Cross figures were for 1980-1983; Department of Labor's statistics covered the past 10 years.

Is it fair to ask if these items might somehow be related?

Is it reasonable to be puzzled by the thought that the health care community has been pilloried over the past several years for "the spiraling costs of health care?"

Was a picture painted by insurance companies for business and industry of a health care community running totally out of economic control — driving up costs without *any* fiscal restraint?

Did business and industry buy that picture painted by insurance carriers, then join in the call for draconian measures to curtail the rate of increase and demand health cost containment?

Now here is where my puzzlement turns to outright consternation.

The nation is reported to view with alarm the outrageous increases in health costs, yet it continues to demand the finest medical care available. Businesses form coalitions and talk about wiser spending of health insurance dollars, while government is concerned it might have to step in and regulate an industry that fiscally is running amuck (government may *have to* bring order out of chaos). While these phenomena are occurring almost simultaneously, we have not heard *one word* of concern or worry over an *average* 32% increase in malpractice insurance!

We do not suggest insurance carriers and businesses have *not* protested — we simply have not *heard* their protests. Perhaps one could not hear their protestations over the cacophony of screams about the "spiralling costs of health care."

Is there a feeling abroad with insurance carriers, business people, governments and the person on the street that "doctors can afford it"?

Is there an ambivalence that though people respect their physicians and rate them high in credibility, the other side of the emotional coin says, "Good! I'm glad their malpractice rates are up. Let *them* pay for once!"

Can it be that individuals note a 32% increase in doctors' insurance costs as a vicarious way of striking back at a group they feel makes too much money? In short, why aren't people

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Mr. Langfield is Executive Director of the Linn County Medical Society with headquarters in Cedar Rapids, Iowa.



incensed over malpractice insurance costing 32% more?

The figures produced in the original 4 items suggest these conclusions to us:

1) Health care costs are not rising out of control menacing the entire economy.

2) Insurance carriers simply erred when they projected continuing "spiralling health care costs" over the years.

3) The health care community, despite accusations to the contrary, *has* been sensitive to costs and has made a Herculean effort to control those increases — and in that, they have been imminently successful.

4) Business quite rightly reacted to increased costs — but it would *appear* those costs were the insurance carrier's dire predictions — *not* the *actual* expenses of quality health care.

And the final conclusion:

5) Insurance costs for malpractice are "spiralling out of control," but nobody except physicians (who will of course be seen as self-serving) seems to care!

Now, if these conclusions are logical, we have a large problem. If the person in the street views malpractice insurance increases as a victory of the "have-nots" over the "haves," they could not be more mistaken!

Warren Wulfekuhler, M.D., Mason City, chairman of the Iowa Medical Society Medico-Legal Committee, said (in a news story in the DES MOINES REGISTER) patients ultimately will bear the burden. "If my insurance goes up \$5,000, I'm not going to take \$5,000 out of my pocket; I'm going to charge the next 5,000 patients \$1 more apiece."

Much of the same public misunderstanding occurs with corporate taxes. The public may delight in XYZ corporation paying millions of dollars in taxes — but the sad truth is corporations don't pay taxes, people do.

All a corporation does is pass the increased tax burden along to the consumer in higher prices. It must sooner or later be paid by a *person*!

It would be so beneficial to *all* the people in the nation — business, labor, government, everyone — if they could understand that a very substantial way for them to impact positively on health care costs would be to demand tort reform and a control of malpractice cases.

Not that we suggest all malpractice suits are nonsense. If a person has cause for compensation, he is most certainly entitled to it. That is a

---

*"In Iowa today you can sue a physician for malpractice with fewer facts or credentials than it takes to open a charge account."*

---

right, one that we should fight to defend.

But when statistics show 54% of cases are held (by courts) to be without substance — yet still have to be defended at a cost of thousands of dollars per case — some updating of the law is absolutely necessary if we are ever going to root out causes of high medical costs. In Iowa today you can sue a physician for malpractice with fewer facts or credentials than it takes to open a charge account!

As a part of the health community, we are proud that we contributed significantly to a real decrease in cost growth.

Insurance, business and government are expending a great deal of energy on cost containment efforts; should they expend as much on tort reform there is little doubt that we would see malpractice insurance rates fall.

This, we submit, is a fair and reasonable next step in health care cost containment.

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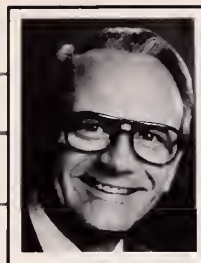
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## COMMENTING EDITORIALY



### WINNER AGAIN!!

**W**e did it again!

Yes, to our great satisfaction, IOWA MEDICINE is a winner in the 1983 (ninth annual) Sandoz Medical Journalism Competition. We have been recognized in this competition on three previous occasions. We thank Sandoz, Inc., for choosing us to receive a 1983 Special Award.

It is a privilege to share in the Sandoz competition with some fine medical publications; we are entered in the 3,000-plus circulation category. This year's first prize (we received it in 1976) was awarded to MICHIGAN MEDICINE.

### PROMISCUITY

*"The precise and intelligent recognition and appreciation of minor differences is the real essential factor in all successful medical diagnosis. . . . Eyes and ears which can see and hear, memory to record at once and to recall at pleasure the impressions of the senses, and an imagination capable of weaving a theory or piecing together a broken chain or unraveling a tangled clue, such are the implements of his trade to a successful diagnostician."* — JOSEPH BELL (1837-1911), Lecture to Students, Faculty of Medicine, University of Edinburgh.

**F**OR SOME TIME I have wanted to write on the subject of promiscuity. The term "promiscuous" has an intrigue about it. One can conjure varied thoughts of its connotations. Now that I have your attention, I can proceed.

Promiscuous means indiscriminate. Indiscrimination means random, or lacking in the ability to differentiate or distinguish accurately. Many physicians are victims of promis-

We congratulate Judy Marr and her Michigan compatriots. Other winners of 1983 Special Awards are WESTERN JOURNAL OF MEDICINE and the JOURNAL OF THE MEDICAL SOCIETY OF NEW JERSEY.

The IMS Special Award takes the form of a certificate and a check for \$250. These items will be presented this month at the 1984 IMS House of Delegates in Des Moines. We are grateful to Sandoz for providing this added bit of stimulation to do a good job. The Sandoz medical journalism workshops and newsletters are also beneficial.

In addition to having been honored by Sandoz in 1983 and 1976, IOWA MEDICINE was cited for outstanding appearance and editorial quality in the 1978 and 1982 competitions.

cuous action in their care of patients, especially in the choice of diagnostic work-up. Fear of overlooking something, fear of lawsuits, or lack of total understanding of the diagnostic protocol may lead to too many X-rays, too many laboratory procedures, or too many invasive techniques. Our profession has available a myriad of procedures, tests, as well as instruments, monitors, gadgets, and tools. To draw the line on their use is difficult.

The student of medicine who suggests varied and sundry tests, many complicated and expensive, is considered well-read and above the average. As a resident physician the new practitioner has the opportunity to order all those laboratory tests, X-rays, and procedures. Often he has little practical concept of their cost, limitations, or even of their value. "Complete work-up," however, prompts the ordering of any or all of the known tests. It's habit forming to say the least. Then, there is also the old excuse . . . "it's a learning exercise" . . . at the expense of the patient or the third party payor.

*(Please turn to page 208)*

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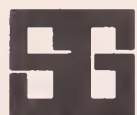
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The physician, when new in practice, continues the theme . . . "complete work-up," "cover all bases," avert "errors of omission," "avoid lawsuits." But where does it all end? Can we continue to expect the patient, or his insurance company, to pay for all these procedures? They do have a valid complaint!

"Discrimination" has become a "bad word," but we must discriminate in the ordering of many of the procedures we have at our disposal. Diagnosis of a patient's problem often can be shrouded by useless or inconsequential data. I once read that a sound clinician attacks the core of the problem and avoids being mousetrapped by tangential data. Avoid the tangential data.. Order tests in a discriminate manner. Do not be a promiscuous diagnostician. — M.E.A.

## QUESTIONS AND ANSWERS

(Continued from page 195)

more critical in the elderly. We are recording all drugs which Iowa nursing home residents receive.' Shortly, we will notify a resident's physician if there is a potential for interaction because of the drugs being used. Further, we have classified the most common nursing home diagnoses. We are proceeding to evaluate the types of care given these residents by Iowa physicians per diagnosis. Approximately 10 diagnoses have been researched, and we are compiling data for Iowa physicians.

**Realizing the research potential of the IFMC data system and the Foundation's responsibility to the Department of Human Services for management information, is there any way Iowa physicians can make the Foundation's work easier?**

Iowa physicians obviously will continue to practice a high standard of care, whether it is in the hospital or in the nursing home. One area, however, continues to provide controversy, and it is that of documentation of diagnoses and reasons for drug utilization. In most instances, we are doing chart review. Thus, it is extremely important for Iowa physicians to maintain quality records in nursing homes — just as they do in hospitals.



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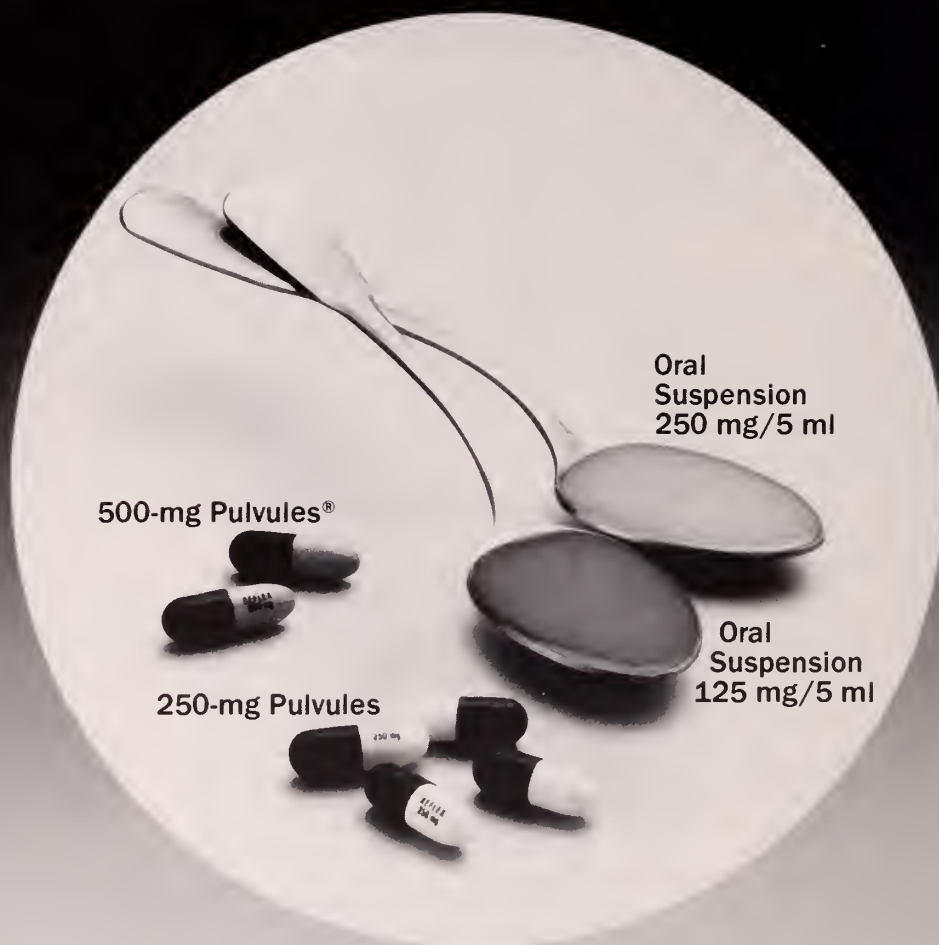
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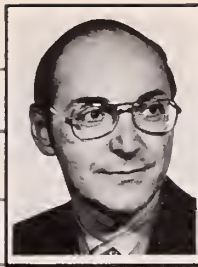
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Richard M. Caplan, M.D.

## OUR MAN IN EDUCATION



### LEARNING STYLE AND DARWIN

**I**T'S FUNNY, HOW IDEAS come together. Events make that happen, sometimes. And many times, it's the ideas that make events happen. A book just came, an academic compendium about learning styles and continuing medical education. Sure, some of us learn best from reading, some from listening, some from shoves and tugs of daily practice (Hamlet's slings and arrows of outrageous fortune?), and some just from the process of drifting through one's life.

I first learned about Darwin a long time ago. What I was told he said seemed to make sense. It still does, only I know now there are still lots of folks who don't think so, and many knowledgeable sympathizers who are trying to modify what he said, as Einstein did to Newton.

A few years ago, at a museum in New Zealand, I read an autograph letter Darwin wrote and saw many specimens of the strange animals they have there, but which he somehow failed to encounter in 1838 when he landed on the North Island briefly with the *Beagle*. Then last fall I attended an interesting conference about Darwin's Legacy, at Gustavus Adolphus College, and learned lots more. Just last month, chance bedded me down in Shrewsbury, England. Darwin was born there, the guide book said. The big statue of him seated outside the school he attended (now the Public Library) was surely confirmation. The old Shrewsbury castle sits across the modern street, adding solemn assurance that its native son was correct. Then on to London and a visit to the Royal College of Surgeons, a big building that houses the splendid Hunterian Museum, derived originally from the collection of the great 18th century surgeon, John

Hunter. There are fascinating pathological specimens there, like the skeletons of a 7½ foot man and a dwarf who died at age nine, 19 inches in height. And a placenta from a Greek woman who, in 1974, took a drug to induce ovulation. It worked, and yielded octuplets. And there was that placenta with its eight umbilical cords, and surrounded by the eight, named, short-lived, 2½ pound children, each in its own bottle. A little grim, perhaps, to have such transparent little coffins placed in a glass sarcophagus illuminated by fluorescent lights. But mostly the museum is a fabulous collection of specimens of comparative anatomy. If Clarence Darrow had sought to plead his Scopes trial defense in the Hunterian Museum, he'd have won his case with ease.

And so the ways of learning are formal and informal, easy and difficult, fun and not such fun. I guess what's mainly needed is simply to be receptive to learning in lots of different ways — the computers are clearly providing a major new way. But sometimes, too, it's useful to just pause and let the brain put some things together on its own. Walt Whitman discovered that. He told about it in a superb poem. And maybe that's where I learned about this type of learning:

When I heard the learn'd astronomer,  
When the proofs, the figures, were ranged in  
columns before me,  
When I was shown the charts and diagrams, to  
add, divide, and measure them,  
When I sitting heard the astronomer where he  
lectured with much applause in the lecture-  
room,  
How soon unaccountable I became tired and  
sick,  
Till rising and gliding out I wander'd off by  
myself,  
In the mystical moist night-air, and from time  
to time,  
Look'd up in perfect silence at the stars.

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

# STATE DEPT. OF PUBLIC HEALTH



## ASSESSMENT OF 1983 IMMUNIZATION LEVELS AMONG URBAN AND RURAL SCHOOL CHILDREN IN IOWA

IOWA'S IMMUNIZATION LAW was enacted 7 years ago on November 10, 1977 and became effective January 4, 1978. Since that date, immunization levels have risen dramatically followed by a sharp decrease in incidence of immunizable diseases. Annual audits are conducted to monitor immunization levels in

	Total Kindergarten Population	Kindergarten Population Audited	Percent Audited
Rural	26,912	888	3.3
Urban	15,846	775	4.9
	42,758	1,663	3.9

schools to ensure compliance with the law. The 1983 audit was designed to also note any differences in immunization levels between rural and urban areas and further to determine whether or not parents are deferring immunizations until school entry based on records of entering kindergarten children.

Each child in Iowa attending public or private school is required to present a record of their immunizations showing the dates of administration (day, month and year) to the admitting official upon entry. To perform the

survey the state was divided into 2 groups — urban (containing Pottawattamie, Woodbury, Polk, Black Hawk, Linn, Dubuque and Scott counties) and rural (containing the remaining 92 counties). Using the 1982-83 computer records of kindergarten attendance by schools, 34 urban and 33 rural schools were randomly chosen for audit. Each school was visited during October by State Department of Health field staff to review immunization records.

In schools with A.M. and P.M. classes an alternating system was used to choose a particular class for review. In schools where records were not separated by classroom the entire kindergarten was audited. In the chosen room every child's record was checked as to the number of doses of DTP and TOPV received by 24 months of age and by September 1, 1983. Measles, mumps and rubella shots were tabulated by doses received after 12 months, after 15 months but less than 24 months and by September 1, 1983.

Children with medical or religious exemptions, MMR doses prior to 12 months of age and provisional cards without dates were counted as not immunized. All urban schools maintained records by classroom, most of the rural schools filed records by grade only. Therefore, there were more rural children included in the survey than urban children.

Results of the audit showed the following:

### PERCENT OF CHILDREN WITH NO RECORD OF IMMUNIZATION

	Total in Study	At 24 Months	At School Entrance
Urban	775	2.8	0.8
Rural	888	2.3	2.0

This information on public matters is furnished and sponsored by the Iowa State Department of Health.



# TOPV

	Doses Received	Immunized of:	
		24 Months	School Entrance
Urban	At least one dose	88.0	99.0
	<3	8.6	.4
	≥3	79.4	98.5 <sup>(1)</sup>
	≥4	50.4	96.6 <sup>(1)</sup>
Rural	At least one dose	96.5	98.0
	<3	7.3	.2
	≥3	89.2	97.7 <sup>(1)</sup>
	≥4	52.4	94.4 <sup>(1)</sup>

(1) Individuals with 3 or 4 doses have received at least one dose after 4th birthday.

# D.T.P.

	Doses Received	Immunized of:	
		24 Months	School Entrance
Urban	At least one dose	96.8	99.2
	<3	4.6	0.3
	≥3	92.4	99.0 <sup>(1)</sup>
	≥4	54.1	93.7 <sup>(1)</sup>
Rural	At least one dose	96.5	98.0
	<3	6.5	0.1
	≥3	90.0	97.9 <sup>(1)</sup>
	≥4	54.3	95.0 <sup>(1)</sup>

# M.M.R.

	Age of Administration (%)			Total
	12-15 Months	15-24 Months	School Entrance	
Urban	13.0	75.1	11.0	99.1
Rural	11.7	69.4	16.9	98.0

The results of the survey demonstrate that almost every child in Iowa, rural and urban (98%) enters the health care system and a significant proportion, 88% urban and 81% rural, receive their MMR by 24 months of age. However, at least 40% of Iowa children miss one or more of their DTP and TOPV doses by 24 months of age. This provides evidence that physicians and public clinics should consider notifying parents of due dates of immunization, especially booster doses scheduled for 18 months of age. At school entrance 93.7% of urban and 95% of rural children have received 4 or more TOPV. MMR vaccination levels approach 100% for both urban and rural children. These figures are responsible for the low morbidity levels for both measles and rubella. Since 1981 there have been only 21 cases of

measles confirmed either serologically or epidemiologically linked to a known outbreak. (20 in high school students in Marshall county and one 9 month old, in Clinton county, not confirmed serologically but linked to a known case). The school law appears to ensure high immunization levels at school entrance without increasing the age at which children commence immunizations. Indeed, preschool children appear better immunized now than prior to the institution of the law.

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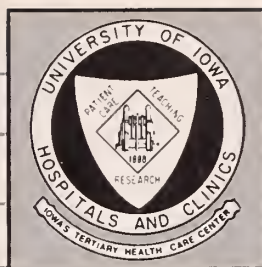
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Blue Shield**  
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## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### ASPARTAME — A NEW LOW-CALORIE SWEETENER

**A**SPARTAME (NutraSweet® — Searle) is a dipeptide methyl ester (L-aspartyl-L-phenylalanine methyl ester) with a sweetening potency approximately 180 times that of sucrose. The compound reproduces the taste of sucrose excellently and has no associated chemical or metallic aftertaste.<sup>1</sup> In 1981 aspartame received approval for usage in a dry form as a sugar substitute in foods such as tabletop sweeteners, breakfast cereals, chewing gums, and dry bases for drink mixes, puddings, fillings, and whipped toppings. Aspartame is currently marketed as NutraSweet® and is available in many powdered preparations including the tabletop sweetener, Equal®. In July 1983, approval was granted for aspartame's use as a sweetener for carbonated beverages. Saccharin, the only other approved, synthetic, low-calorie sweetener, has a marked aftertaste<sup>1</sup> and has been associated in rats with a potential for carcinogenicity. Other sweeteners, including xylitol, sorbitol, fructose, and mannitol, provide as many calories as sucrose.

#### CLINICAL PHARMACOLOGY

Only 0.1 calorie is provided by the amount of aspartame equivalent in sweetness to one teaspoon of sugar (16 calories). The chemical structure of the dipeptide aspartame is obviously different from the disaccharide sucrose. If either of aspartame's 2 amino acids are in the D-isomeric form, rather than L, its sweetness is lost. Studying substituted amino acids indi-

cates that the key to sweetness rests in the amide substitution of the  $\alpha$ -carboxyl group of L-aspartic acid.<sup>2</sup>

Investigations with rodents, rabbits, dogs, monkeys and humans have found that aspartame is metabolized in a manner indistinguishable from its 3 major subcomponents, aspartic acid, phenylalanine, and methanol.<sup>3</sup> No intact aspartame was detected in plasma samples following oral intake. The evidence suggests that aspartame is completely hydrolyzed to aspartic acid, phenylalanine and methanol by peptidases and esterases within the intestinal lumen or enterocyte.

Aspartame's constituents are commonplace in our diet. Aspartic acid and phenylalanine are amino acids present in food proteins. Methyl esters are common plant products and impart flavors in fruits, vegetables, juices, and liquors. Replacing all of the sucrose sweetness in an average American's daily diet requires 8 mg of aspartame/kg body weight. Consuming 1.5 oz of beef or 6 oz of milk would still provide a 70 kg individual with more aspartic acid and phenylalanine than would such an amount of aspartame.<sup>4</sup> A typical soft drink sweetened with aspartame at 555 mg/liter would provide 56 mg of methanol/liter. This is considerably less than the average methanol content of fruit juice (140 mg/liter).

#### STABILITY

Aspartame is most stable in the dry form, at temperatures less than 40°C, and in the pH range of 3 to 5. Prolonged storage, elevated temperature, humidity, aqueous solution, and pH extremes decrease the sweetness of aspartame-sweetened products. This occurs because of conversion of aspartame to degradation products. The major reaction is a cycliza-

*(Please turn to page 216)*

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

tion of aspartyl-phenylalanine to form its diketopiperazine. Because the diketopiperazine is tasteless, sweetness is lost as this degradation occurs. An aspartame solution of pH 4.0 (the acidity of root beer) stored at room temperature would lose 20% of its sweetness in 4.5 months. If the storage temperature for the solution is increased to 80°C, a 20% loss of sweetness occurs in a single day. Even at room temperature and neutral pH, solutions of aspartame lose half their sweetness within a few hours.<sup>4</sup>

#### ADVERSE EFFECTS AND TOXICITY

Patients homozygous for phenylketonuria (PKU) cannot metabolize phenylalanine effectively and accumulate phenylalanine and related metabolites in the blood, spinal fluid, and urine. With dietary ingestion of moderate-to-large amounts of phenylalanine normally present in protein, they develop central nervous system damage and mental retardation.

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*"Aspartame is currently available in a number of low-calorie food and beverage products and has recently been marketed as a carbonated soft drink sweetener."*

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Hyperphenylalaninemia in a pregnant woman can also harm the fetus due to the concentrating effect of the placenta. The amount of phenylalanine in aspartame must, therefore, be considered in calculating diets for homozygous PKU patients.

There is no evidence that the amount of phenylalanine derived from aspartame consumption is dangerous to normal people. Approximately one person in 50 to one in 70 is heterozygous for PKU. Studies with heterozygous PKU subjects consuming 100 mg aspartame/kg body weight demonstrated slower, but adequate metabolism and clearance of the phenylalanine derived from aspartame.<sup>5</sup> This abuse dosage is nearly three times greater than the ninety-ninth percentile of projected total daily ingestion (34 mg/kg).

Studies in human adults and infants have not indicated any significant short-term systemic toxic effects with aspartame intake at 34 mg/kg body weight and at potential abuse levels.<sup>6-7</sup> Only small increases in human milk

aspartic acid, phenylalanine, and tyrosine were noted when mothers consumed 50 mg of aspartame/kg.<sup>8</sup> Long-term studies of animals fed aspartame demonstrated no significant carcinogenicity or systemic toxicity. One study of rodents fed diketopiperazine and aspartame for 104 weeks found no toxic effects.<sup>9</sup> Aspartame does not promote dental caries in rats.

Two potential adverse effects of aspartame have been suggested, but not documented. Firstly, it has been proposed that patients with advanced liver disease will metabolize phenylalanine less efficiently than normal subjects and be at increased risk to develop encephalopathy following aspartame ingestion.<sup>10</sup> Elevated levels of aromatic amino acids (including phenylalanine) and derivatives of phenylalanine (such as tyrosine and octopamine) have been noted in patients with the syndrome of hepatic encephalopathy. However, experimental infusion of phenylalanine does not directly produce hepatic coma.

Secondly, it has been proposed that ingestion of high doses of aspartame with carbohydrate will produce neurochemical changes in the brain, which may have neurobehavioral consequences.<sup>11</sup> Carbohydrate can cause an insulin-mediated decrease in plasma concentrations of branched-chain amino acids, which would normally compete with phenylalanine and tyrosine for transport across the blood-brain barrier. It is suggested that the potentiated increases in the brain monoamine precursors (including phenylalanine) will result in alterations in catecholamine and serotonin synthesis. Behaviors mediated by these neurotransmitters would, in turn, be influenced. However, Fernstrom *et al*<sup>12</sup> recently demonstrated no significant alterations in rat brain neurotransmitters with administration of high-dose aspartame. Furthermore, no long-term behavioral effects were observed in infant monkeys fed high doses of aspartame.

#### USES

Aspartame is only available as the food ingredient, NutraSweet®, and as the tabletop sweetener, Equal®. One packet of Equal® contains 0.04 g aspartame. Most of the 4 calories per package come from buffers and extenders. It provides sweetening equivalent to 2 teaspoons of sugar (32 calories) or one packet of



the saccharin sweetener, Sweet 'n Low® (4 calories). Equal® tablets contain 0.02 g aspartame and provide 0.4 calories. Aspartame is currently available in a number of low-calorie food and beverage products and has recently been marketed as a carbonated soft-drink sweetener. Because the subcomponents of aspartame, the amino acids and methanol, are metabolized in the same manner as these normal substances in the diet, aspartame is considered a nutritive substance (not an artificial sweetener). Its use is not restricted to "special dietary foods."

Clinical trials have demonstrated excellent acceptance of aspartame-sweetened foods and a significant reduction in caloric intake during covert substitution of sucrose-sweetened with aspartame-sweetened foods.<sup>13</sup> Obese, diabetic and weight-conscious individuals should benefit from the caloric restriction possible with consumption of aspartame-sweetened foods. Chewing gums sweetened with aspartame are not currently available, but unlike sucrose-sweetened gum should not promote dental caries.

Products containing aspartame are required to bear the statement: "Phenylketonurics: Contains phenylalanine." Because of aspartame's tendency to degrade when exposed to prolonged heat, instructions are also required warning against its use in high-temperature cooking.

#### SUMMARY

Aspartame is an excellent-tasting, low-calorie sweetener with no significant known toxicity. It is metabolized as its three subcomponents, aspartic acid, phenylalanine, and methanol, which are normal dietary constituents. Patients homozygous for phenylketonuria should be warned to calculate the phenylalanine content from aspartame in their diets. Prolonged storage and exposure to heat produce degradation products, which decrease the sweetness of aspartame products. The main decomposition product, the diketopiperazine, has no demonstrated toxicity in animal studies. Although long-term studies of aspartame consumption by people are not yet available, current data indicate little reason to anticipate any major toxicity. — STEPHEN L. BURGERT, M.D., *Fellow in Gastroenterology, Department of Internal Medicine*

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**2**  
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## March 1984 Morbidity Report

Disease	Mar. 1984 Total	1984 to Date	1983 to Date	Most Mar. Cases Reported From These Counties
Amebiasis	6	11	14	Scattered
Brucellosis	0	1	0	
Chickenpox	1455	3017	2847	Scattered
Campylobacter	16	43	44	Scattered
Cytomegalavirus	2	6	6	Linn, Palk
Eaton's Agent infection	5	9	85	Jahnsen, Linn, Scott
Encephalitis, viral	1	3	12	Dubuque
Erythema infectiosum	0	0	24	
Gastroenteritis (GIV)	1915	6044	5960	Scattered
Giardiasis	16	46	44	Scattered
Hepatitis, A	1	7	9	Linn
Hepatitis, B	11	32	13	Scattered
Hepatitis, Non A-B	3	7	10	Adair, Clinton, Dallas
Hepatitis type unspecified	3	4	3	Kassuth, Lausa, Muscatine
Herpes Simplex	101	223	206	Scattered
Herpes Zoster	0	0	5	
Histoplasmosis	3	3	8	Dubuque, Linn, Palk
Infectious mononucleosis	28	66	77	
Influenza, lab confirmed	53	106	9	Scattered
Influenza-like illness (URI)	6145	23287	16997	Scattered
Legionellosis	0	0	6	
Malaria	0	1	1	
Meningitis				
aseptic	4	9	6	Dubuque, Palk, Scott
bacterial	10	34	40	
meningococcal	1	13	4	Black Hawk
Mumps	6	13	15	Scattered
Pertussis	0	3	0	
Rabies in animals	15	37	94	Scattered
Reye Syndrome	1	1	1	Scott
Rheumatic Fever	0	0	0	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmonellosis	22	59	69	Scattered
Shigellosis	4	15	13	Ida, Linn, Palk
Tetanus	0	0	0	
Toxic Shock Syndrome	1	4	5	Paweshiek
Tuberculosis				
tuberc. ill	11	20	25	Scattered
bact. pos.	9	15	18	Scattered
Typhoid Fever	0	0	0	
Venereal diseases:				
Gonorrhea	402	1115	1104	Scattered
Syphilis	5	10	7	Palk, Pattawattamie
Other Non-Reportable Diseases: Ascariasis — 1, Carroll, 1, Palk.				

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### BRIEF SUMMARY

#### PROCARDIA\* (nifedipine) CAPSULES

For Oral Use

**INDICATIONS AND USAGE:** 1. **Vasospastic Angina:** PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation; 2) angina or coronary artery spasm provoked by ergonovine; or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm or when angina is refractory to nitrates and/or adequate doses of beta blockers.

2. **Chronic Stable Angina (Classical Effort-Associated Angina):** PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

**CONTRAINDICATIONS:** Known hypersensitivity reaction to PROCARDIA.

**WARNINGS: Excessive Hypotension:** Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out. In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and, if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery.

**Increased Angina:** Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

**Beta Blocker Withdrawal:** Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

**Congestive Heart Failure:** Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event.

**PRECAUTIONS: General: Hypotension:** Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

**Peripheral edema:** Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

**Drug interactions:** Beta-adrenergic blocking agents (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates: PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antihypertensive effectiveness of this combination.

**Digitalis:** Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization.

**Carcinogenesis, mutagenesis, impairment of fertility:** When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

**Pregnancy:** Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in rats, mice and rabbits, and abnormalities in monkeys.

**ADVERSE REACTIONS:** The most common adverse effects include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients; transient hypotension in about 5%, palpitation in about 2%, and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antihypertensive medication. Additionally, the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

**Laboratory Tests:** Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LOH, SGOT, and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy has been reported twice in the extensive world literature.

**HOW SUPPLIED:** Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59° to 77°F (15° to 25°C) in the manufacturer's original container.

More detailed professional information available on request

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is remarkable."*

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flowers again."*

*"I have been able to do volunteer  
work...and feel needed and useful  
once again."*

PROCARDIA can mean the return to a more normal life for your patients—having fewer anginal attacks,<sup>1</sup> taking fewer nitroglycerin tablets,<sup>2</sup> doing more, and being more productive once again.

Side effects are usually mild (most frequently reported are dizziness or lightheadedness, peripheral edema, nausea, weakness, headache and flushing, each occurring in about 10% of patients, transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%).



Quotes from an unsolicited letter received by Pfizer from an angina patient. While this patient's experience is representative of many unsolicited comments received, not all patients will respond to Procordia nor will they all respond to the same degree.

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*for the varied faces of angina*

## **PROCARDIA<sup>®</sup>** **(NIFEDIPINE)** Capsules 10 mg

\*Procordia is indicated for the management of:

- 1) Confirmed vasospastic angina.
- 2) Angina where the clinical presentation suggests a possible vasospastic component.
- 3) Chronic stable angina without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or nitrates or who cannot tolerate these agents. In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks' duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in these

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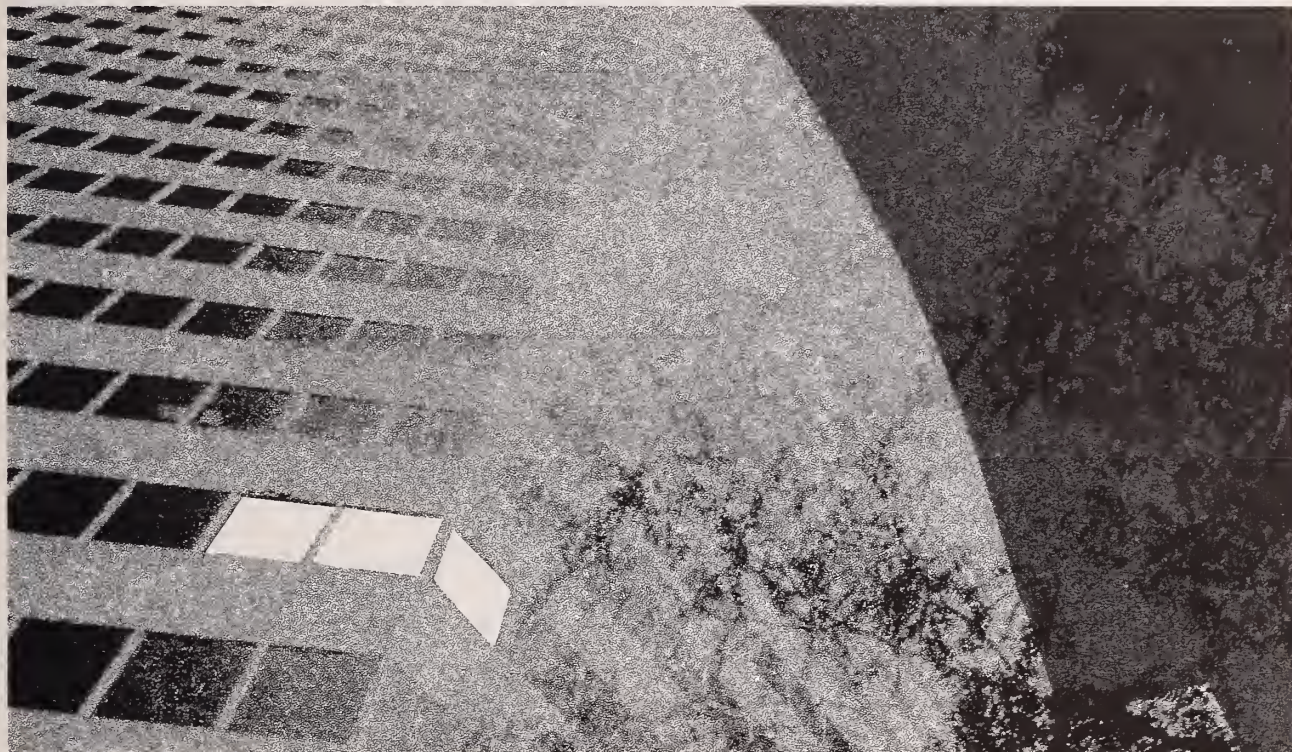


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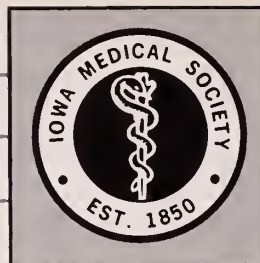
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News About Colleagues

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## ABOUT IOWA PHYSICIANS



**Dr. Lucas VanOrden, III**, recently joined the medical staff at the Mental Health Institute in Independence. Dr. VanOrden is a former professor of psychiatry and pharmacology at the U. of I. College of Medicine. . . . **Dr. Frank D. Edington**, Spencer, recently retired from medical practice. Dr. Edington received the M.D. degree at the U. of I. College of Medicine and began medical practice in Spencer in 1937. . . . **Dr. Kelly Ross** will join the Osage Medical Group in July. Dr. Ross received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at Broadlawns Medical Center in Des Moines. . . . **Dr. Adrian Flatt**, former chief of hand orthopedics at the U. of I. College of Medicine,

has been elected chairman of the Baylor University Medical Center Medical Board in Dallas, Texas. Dr. Flatt was named chief of orthopedics at Baylor University in 1982. . . . **Dr. Stanley Haag**, Des Moines, was elected president of the Des Moines Consortium of Family Practice Departments. The consortium is an association of family practitioners in the Des Moines area. . . . **Dr. Wayne E. Rouse**, Boone, recently was appointed to the Commission on Public Health and Scientific Affairs of the American Academy of Family Physicians. . . . **Dr. David Christ** will join Drs. Mary Gannon and Walter Mendenhall in

*(Please turn to page 222)*

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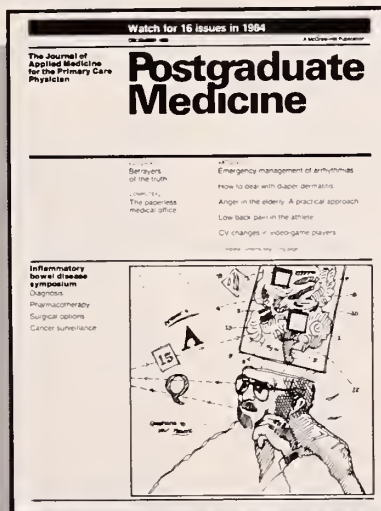
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Spencer in July. Dr. Christ received the M.D. degree at the University of Kansas School of Medicine and presently is completing his urology residency at Kansas University Medical Center.

**Dr. Ross D. Feldman**, assistant professor of internal medicine and pharmacology at the U. of I. College of Medicine, has been named the George Morris Piersol Teaching and Research Scholar by the American College of Physicians. Dr. Feldman is 1 of 5 physicians to receive a 3-year, \$48,000 teaching and research scholarship designed to encourage young physicians' pursuit of excellence in teaching and researching internal medicine. . . . At the Iowa High School Boys Basketball Tournament, Team Doctor Awards were presented to **Dr. William Bennett**, Marion; **Dr. T. J. Carroll**, Sibley; **Dr. Alvin E. Evers**, Pella; **Dr. John G. Lavender**, George; **Dr. Robert J. Martin**, Cherokee; and **Dr. Richard L. Sedlacek**, Cedar Rapids. **Dr. James Gannon**, Laurens, received the Team Doctor Award at the Iowa High School Wrestling Tournament. The awards are

presented by the Iowa High School Athletic Association. . . . **Dr. A. R. Powell**, longtime Elkader physician, retired in April. Dr. Powell received the M.D. degree at Loyola University Medical School in Chicago and located in Elkader in 1947. . . . **Dr. Evan P. Varkony** has joined **Dr. Edward Farrage** in family practice in Council Bluffs. Dr. Varkony received the M.D. degree at the University of Manitoba in Canada and interned at St. Boniface General Hospital and the Health Sciences Centre in Winnipeg, Canada. . . . **Dr. David C. Naden**, Muscatine, recently attended a seminar on "Arthroscopic Surgery," in Salt Lake City, Utah.

**Dr. James A. Clifton**, Roy J. Carver professor at the U. of I. College of Medicine, recently was presented the Alfred E. Stengel Memorial Award by the American College of Physicians for more than a decade of outstanding service to ACP. A past president of ACP, Dr. Clifton has also served on the College's governing body, the board of regents and on several committees.

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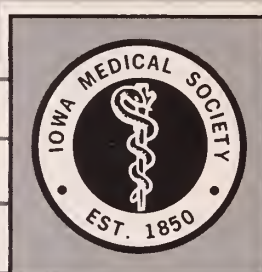
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A Monthly Commentary

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## IN THE PUBLIC INTEREST

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### Hospitals Need 'Flexibility'

**T**HAT THE STATE'S health care delivery landscape is continuing to change dramatically was substantiated further in data released recently by the Iowa Hospital Association.

This IHA study of 1983 hospital use adds yet another chapter to the *good news/bad news* scenario. The *good news*, of course, is that lower-cost, outpatient care continues to expand. The *bad news* has to do with the concern of many over just how far we can go to save costs without threatening safety, quality and, ultimately, the viability of our inpatient facilities.

The 1983 IHA data are compiled from 59 Iowa hospitals. Included were small, medium and large hospitals, nonprofit and publicly-owned ones; they are geographically spread. They are said to reflect Iowa hospitals overall.

Here are main points from the IHA study.

- **Inpatient admissions — pediatric, obstetric, adult and Medicare — were all down in 1983.**

The IHA study showed a 6.2% decrease in hospital inpatient admissions and an 8.9% drop in inpatient days. Hospital admissions in 1983 were 19,500 fewer than in 1982; the patient days declined more than 200,000. This past year saw the first decline in admissions and patient days for Medicare since it began.

The average length of stay in these Iowa hospitals was 7.0 in 1983, compared to 7.2 days the previous year. The occupancy rate, according to the IHA, was down to 61.9% in 1983 over 67.8% the preceding year.

- **Outpatient care is on the increase — to supply less expensive care while still assuring quality is not sacrificed.**

The IHA study demonstrates the continuing growth in outpatient visits; the increase in 1983 was 12.8%. Annual outpatient growth rates in

the preceding three years were, in order, 4.6%, 5.7% and 11.9%.

- **The changing nature of the market demand is forcing a reduction in the Iowa hospital work force.**

For the first time in several decades, says the IHA commentary, 1983 produced a reduction in hospital full-time equivalent personnel. There were 368 fewer FTE's in 1983 than in 1982. It cited 15 hospitals which have reduced work forces the past two years by layoff or attrition by more than 800 employees.

- **The increase in hospital care costs moderated in 1983 — to parallel the overall cost of living rise; this happened despite a population of increasingly senior status and despite the continuing emergence of new technology.**

The hospital cost picture for Iowans in 1983 showed a 6.6% increase, as opposed to 17.1% in 1981 and 12.8% in 1982. The IHA narrative says the patient cost includes gross inpatient and outpatient revenue and deductions for contractual allowances, bad debts and charity care. It is what patients or third party payers actually pay.

The time is here, says the IHA, to focus not away from hospital cost moderation, but with similar fervor on the appropriate use of these community facilities we call hospitals. The IHA study discourages further financial, legislative and regulatory barriers to local adaptation.

Iowa hospitals must be allowed and helped to adjust to a changing environment. Regulatory roadblocks erected totally in the name of further health care cost reduction offer deleterious prospects and threaten the important quality side of the equation.

These matters are of substantial consequence to Iowa physicians.

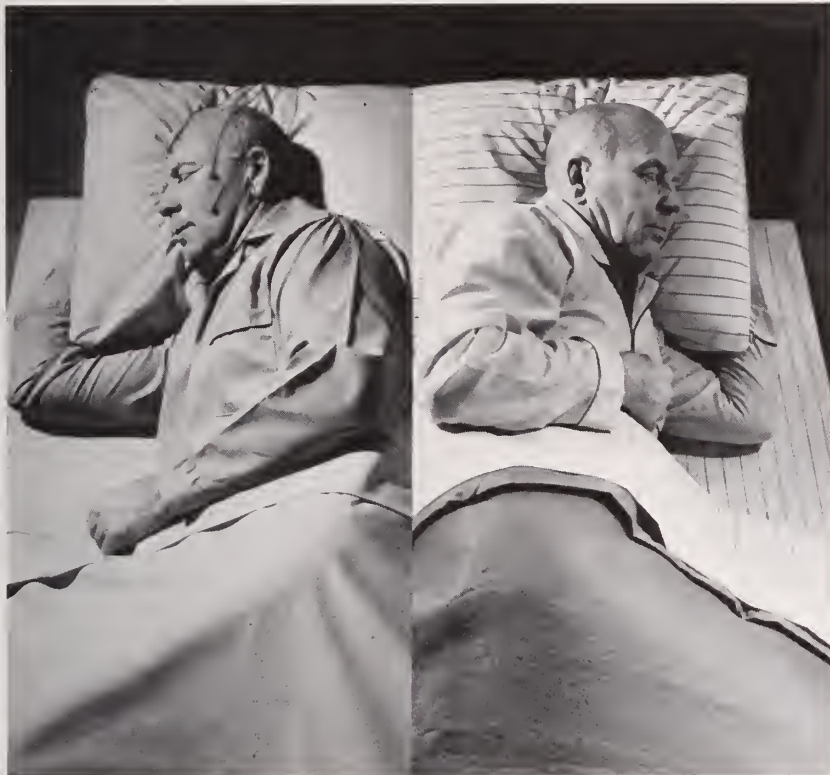
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Iowa Medicine





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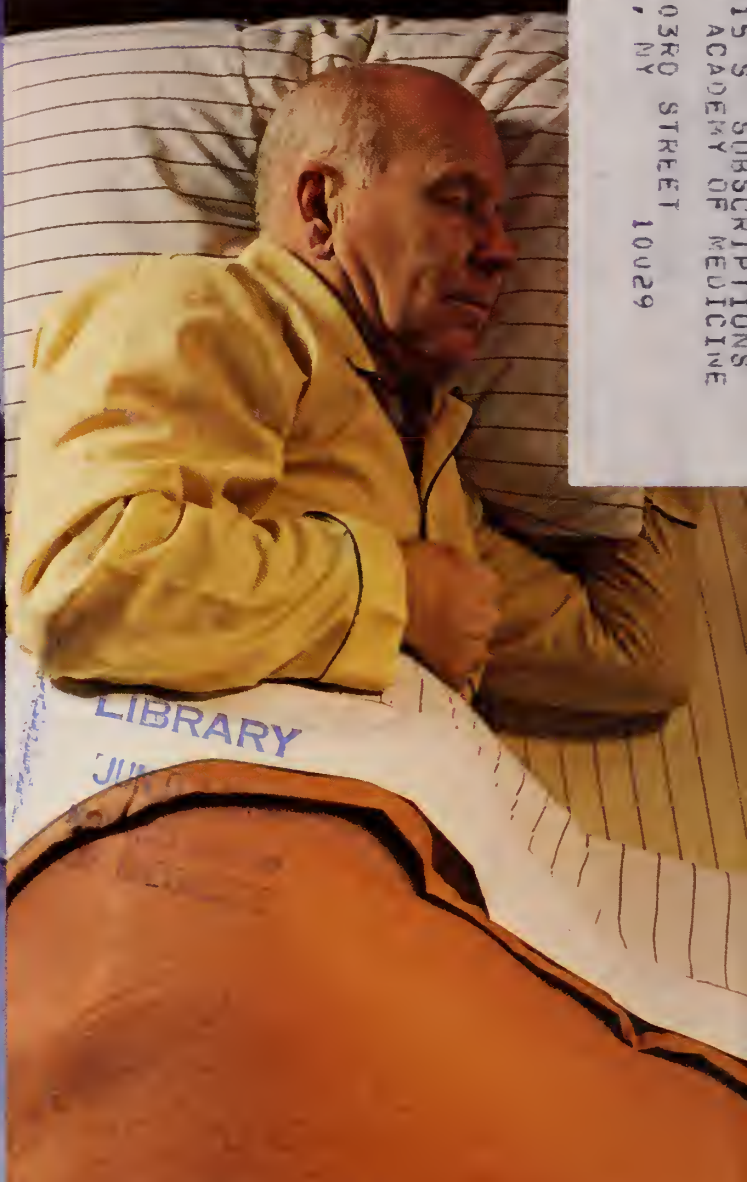


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# IowaMedicine

June 1984

Journal of the Iowa Medical Society



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# Iowa Medicine

Volume 74 Number 6

Journal of the Iowa Medical Society

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## ABOUT THE COVER

**Iowa Medicine**  
June 1984  
Journal of the Iowa Medical Society



## QUITE A GUY!

Plaque in hand, a pleased John H. Sunderbruch, M.D., Davenport, is surrounded by equally happy family members following his May 5 receipt of the Iowa Medical Society Distinguished Service Award. Only the third Iowa physician to receive this highest IMS award, Dr. Sunderbruch has been a state medical leader for many years. He was president of the Iowa Medical Society in 1971.

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## PRESIDENT'S PRIVILEGE



**I** WOULD LIKE to think that each of you is as proud to be a member of the Iowa Medical Society as I am.

It was rewarding last month to listen to the reports and resolutions introduced at our 1984 IMS House of Delegates. There was concerned and constructive debate of these matters in the reference committee meetings. The written reports of the reference committees were ably presented; each one expressed the well-thought-out consensus statements on the issues.

During long hours of meetings, dedicated physicians serving on the reference committees explored alternatives and sought answers to questions on important issues before the Society. This effort helped the full House of Delegates make informed and appropriate policy decisions for us.

We can all be very appreciative of the support given by our loyal and dedicated staff in this process. Eldon Huston and his associates are highly professional in carrying out the day-to-day responsibilities of the Society. They assemble important information and work closely on our behalf with other professional societies, other groups interested in health issues, and, of course, with other agencies of government and legislators.

Because of the high quality of the volunteer physician leadership and our fine staff, I ask you to reaffirm your COMMITMENT to the Iowa Medical Society. Although our membership level is high, we still have some eligible nonmember physicians who remain outside our state professional orga-

nization. We need to broaden our COMMUNITY of physicians. The physicians who serve as COUNCILORS represent 16 geographic districts. They make up the JUDICIAL COUNCIL. The JUDICIAL COUNCIL has developed a 1984 membership recruitment program called OPERATION ECLIPSE. As your president, I would like to lend my support to these efforts.

We know that written invitations to join the Society are less effective than doctor-to-doctor contacts. We need physicians to understand how our organization works and the importance of our effective, constructive contribution to the changes taking place today. We are asking member physicians to find a convenient time to visit personally with nonmember colleagues.

Your delegates and your councilor will appreciate your help. TOGETHER we can broaden participation in the Iowa Medical Society to the benefit of us all.

*John Tyrrell, M.D.*

**John E. Tyrrell, M.D.  
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Davenport, Iowa

## Who Buys Quality — Anymore?

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*This question is the focus of comments made to the 1984 IMS House of Delegates by retiring Society President Erling Larson. The medical profession must be the dominant voice for quality. To do less, Dr. Larson says, would be to shirk our ethical responsibilities.*

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**I**T IS ALMOST impossible for me to believe the most challenging, exciting, fatiguing and frustrating year of my life is about over. To all who helped me attain this honor, to those whose work and support made it possible for me to function, and to those of you who offered friendship and loyalty, I thank you from the depths of my heart.

When asked a year ago about my goals as Iowa Medical Society president, I said my first one was to involve more women and young physicians in organized medicine. A second pledge to myself was not to be the first IMS

---

These remarks were presented by Iowa Medical Society President Erling Larson, M.D., on May 5, 1984, at the Annual Meeting of the House of Delegates. Dr. Larson concluded his term of office May 6.

president to be impeached; I meant that in all seriousness.

Medicine has never seemed to be more challenged. We have increasing federal and state regulations, a threatening situation in the Iowa courts, rising malpractice premiums, a debate over physician manpower, a health care cost crisis, and the mounting presence of corporate medical practice. All of these point to near-term disaster.

However, with doggedness and flexibility on the part of many of you, the Iowa Medical Society has survived another year. Many of the potential tragedies have been averted — at least for now. I ask that you pray for the new IMS officers. Clearly, they face problems delayed but not solved. Questionable pressures from many forces still threaten our way of delivering medical care.

In thinking back over these past 12 months, I found myself reminiscing even further into yesteryear. I wonder how much I had forgotten from those days when I was an alternate

delegate to the IMS House. I pulled out some 1961 periodicals to review the economics of medicine at that time.

Let me give you a scattering of headlines from 1961. *Needed: Wonder Cure for Soaring Hospital Charges — High Hospital Costs Laid to Physicians — High Cost of Protection Worries Blue Cross, Doctors, Hospitals — Hospital Deficits Increase With Advance in Medicine — Soaring Hospital Costs Key Blue Cross Rate Bids.* And here is another one that could just as well have been from 1984 — *State Study Asks Hospital Control to Hold the Cost Line.* The cover of MEDICAL ECONOMICS for June 19, 1961 proclaimed *The Hospital Cost Crisis.* A passage read, "Hospital costs will surge up to \$50 per day within five years and your professional freedom may be swept away in the backwash of public protest."

Maybe these earlier observers missed in guessing our professional freedoms would be swept away in five years, but they were amaz-

---

*"I would rather see us stop being physicians than to see us becoming careless or uncaring. It's going to be our responsibility to maintain the balance between proper cost and effective care."*

---

ingly correct on what needed to be done and the roles physicians would need to take in cost control.

From 1946 to 1961 the cost of living index inched up an average of three percentage points a year — up 45% in those 15 years. 45%! During that same period hospital charges went up 500%.

There are abundant reasons why hospital costs have increased. I do not use these figures to criticize hospitals; they are cited simply to illustrate the problems we think are *new* are really problems that began many years ago.

State insurance commissioners were saying things then they could well be saying now. The New York insurance commissioner is quoted, "The medical profession does have the ultimate responsibility to insure the public of high quality hospital care without waste or abuse."

What were physicians doing in 1961 to help with the cost crisis? Here are several objectives they sought:

- The provision of understandable hospital bills to patients directly relating charges to services.
- The payment by third parties for outpatient studies.
- The reduction of "admissions for convenience" demanded by patients.
- The elimination of pre-weekend elective admissions or performance by hospitals of 7-day-a-week services, particularly laboratory and x-ray.
- The performance of diagnostic tests immediately upon admission without delay to the second day.
- The appointment of committees to supervise laboratory studies in hospitals.
- The curtailment of long-term hospital stays.
- The closing down of unneeded hospital beds.
- The use of labor-saving devices — even in 1961 they said, "Machines may cost plenty, but people cost more."
- The sharing of highly specialized facilities by hospitals and the use of group purchasing.
- The experimentation with home care.

And finally, these 1961 physicians recommended, above all, that the profession convince patients that doctors care about their hospital bills, that they are high, and there are ways to hold them down. They said, "If patients ever conclude that doctors don't know and don't care, the hospital cost crisis will turn into a crisis for private medicine, probably its last."

All right, what do we do in 1984?

Frank Jirka, M.D., president of the American Medical Association, says it effectively, "First of all, we must continue to be good physicians. Secondly, we must meet the demands imposed by the economy, and, thirdly, we must learn to balance the demands of quality care against those of more reasonable cost."

But Dr. Jirka adds, "There comes a time when we dig in our heels and say 'enough.' And that point arrives when we are expected to do less than our patients require."

He continues, "The strictures of the economy, the problems of financially strapped hospitals, the penuriousness of insurance programs, and the threat of legislative action cannot be allowed to prevent us from being physicians. He says the fact is, "I would rather see us stop being physicians than to see us becoming

(Please turn to page 238)





JOHN E. TYRRELL, M.D.

Manchester, Iowa

## Iowa Medicine 1984 — Challenges and Opportunities

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*Five key words figure importantly in today's health care debate, says the new IMS president. Change, cost, complexity, commitment and community each deserve careful contemplation. As a community of physicians, he declares, the Iowa Medical Society is best suited to address the imposing issues of our times.*

---

**I**T IS TRADITIONAL for the newly installed president of the Iowa Medical Society to make a short address upon adjournment of the House of Delegates. A look at the year ahead is in order. Five key words summarize the challenges we face and the opportunities we have.

The first of these key words is *change*. Medicine is always changing but now the change is

rapid. We are facing a restructure of the entire health care industry. Dynamic changes are taking place, driven by powerful forces outside the medical profession.

The second key word is *cost*. Business and government and insurance companies are deeply concerned. The current perception is that physicians and hospitals are unable or unwilling to solve this problem.

The third key word is *complexity*. The problem of costs has had many contributors, including business and government and insurance companies.

*Change, cost and complexity* of the problem are the challenge. There are also opportunities.

First, however, let us affirm our greatest strength — *the doctor-patient relationship*. As physicians, we enjoy a high privilege. We share with patients their joys and sorrows. We

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These inaugural remarks were delivered by Dr. John E. Tyrrell on May 6, 1984, following his installation as president of the Iowa Medical Society.

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## IOWA MEDICINE 1984 — CHALLENGES AND OPPORTUNITIES

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(Continued from page 237)

are present at birth and death and in times of trouble.

There is a contrast between multiple health care providers offering episodic care to their clients — and our own system wherein physicians can and do supply a caring, continuing relationship with patients and their families.

Our next key word is *commitment* — *commitment* to be the patient's advocate — to bring to our patients the best care that is available. But good patient care is not enough. Our *commitment* must be broader. Those powerful forces at work outside the medical profession must be reckoned with. Physicians must become more involved in society's great debate about change and cost.

Committed physicians will work on peer review committees and on hospital medical staffs. They will take time to get to know their

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## WHO BUYS QUALITY — ANYMORE?

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(Continued from page 236)

careless or uncaring. It's going to be our responsibility to maintain the balance between proper cost and effective care. No one else is going to do it. Everyone else's primary, overriding interest is going to be in cost, and only we are left to exhibit and support a primary, dominant interest in the quality of care."

A recent issue of NATION'S BUSINESS discussed industry and health care costs. Every paragraph in that article was aimed at one objective, how to buy the cheapest medical care for employees. There was no mention of

## OKAY LIABILITY CONCEPT

The 1984 Iowa Medical Society House of Delegates approved May 6 a new mechanism through which member physicians may obtain professional liability insurance protection.

This House action has set into motion steps

legislators. And they will work closely with their community leaders.

And so we come to our last key word — *community*! What we cannot do individually, we can do as a *community* of physicians. By joining together we can muster the expertise and, hopefully, the wisdom to be a constructive part of the solution to these problems confronting society.

Your leadership believes the Iowa Medical Society is that *community* of physicians best able to do this job for us. We would urge you to be active and supportive as we work (1) to enlarge our community of physicians; (2) to strengthen our position in the legislative process, and (3) to stress continuously the importance of quality health care.

The practice of medicine that we have today represents a great heritage. We are the current stewards of this heritage. We must use our expertise and collective wisdom to preserve it.

Thank you for the privilege and honor of being your president. I am proud to be a physician. I am proud to be a member of this Iowa Medical Society.

Working together, we will get the job done.

how to buy quality. If this is the way American business buys its other products and services, looking only at price and never quality, then it is not surprising foreign companies have outstripped much of American industry.

To conclude, let me share Dr. Jirka's final statement: "Only we are left to exhibit and support a primary, dominant interest in the quality of care. If we abandon or compromise that interest, we not only betray every tradition and every past giant of our profession, we also betray every man, every woman, and every child who comes to us for help in a time of physical and emotional need."

This message is one Iowa physicians must deliver loud and clear to all of those parties active in the health care marketplace.

necessary to implement the program which is being undertaken in partnership with the American Medical Assurance Company (AMACO).

A fall start up is hoped for. More information will be provided in the July IOWA MEDICINE.



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# Standing Together To Preserve Quality

JAMES E. DAVIS, M.D.

Durham, North Carolina

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*We must work together — through our professional bodies — to assure that our patients always receive care of the highest quality. So long as we do this, we need have little to fear from outside forces. This thought was left with the 1984 IMS House of Delegates by a top officer of the American Medical Association.*

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**W**E WHO CALL ourselves physicians are recognized leaders of a nationwide service industry known as the medical and health care system. There are about half a million of us altogether. We see our patients approximately a billion times a year.

In addition, there are some 7,000 hospitals . . . with more than 5 million employees. That makes us second only to retail trade in total number of employees.

Our field is a potent part of the nation's economy. But we aren't known, nor do we want to be known, as an economic force, primarily. What is more important is what we do. That is to help care for the health needs of the nation's 235 million people. We've been doing it pretty well.

Since 1960, life expectancy has increased from under 70 years to almost 75. Infant mortality has been cut in half. Polio has been almost entirely eliminated, and measles and mumps have almost disappeared. Since 1970, deaths from heart disease have gone down



25%; from stroke, 40 per cent. Patients live longer after treatment for cancer. And many forms of cancer that were fatal not too many years ago can now be cured.

Transplant surgery gives new life and hope to people who would otherwise face death, long hospitalization or, at best, a poor quality of life. One hundred Americans a year get new hearts . . . 5,000 new kidneys. In 1983 alone, cornea transplants improved sight for 23,000 people.

Our patients benefit from new technological advances . . . open-heart surgery . . . pacemakers and new drugs. And from new diagnostic tools such as CAT scanners, ultrasound and nuclear magnetic resonance. Those advances not only help us make faster and more accurate diagnoses, but very often eliminate the need for more dangerous invasive

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Dr. Davis is vice speaker of the American Medical Association House of Delegates. His comments are condensed from a presentation made May 5 to the 1984 Iowa Medical Society House of Delegates.

procedures.

Well, if we are so good, and have done so much for so many, why is everybody angry at us?

The answer is easy.

Spending on medical and health care has gone from \$27 billion in 1960 to \$356 billion last year. From 5% of the gross national product to more than 10%. And the implication when figures like that are used, and they are used often, is that the product is about the same . . . and costs have gone up because of waste, irresponsibility, greed and indifference in the health care field.

Bunk! You don't believe that anymore than I do!

What if we went back to 1960 . . . in price and services? Without kidney dialysis and transplants, tens of thousands of people living good and productive lives today would be

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*"The government is looking for ways to reduce its Medicare expenditures. And in everything it says about the danger of bankruptcy, it never mentions that Medicare was the government's idea."*

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dead. Thousands more who have been cured of cancer would not be alive. Without coronary bypass surgery, people with blocked cardiac arteries would be disabled; or in constant fear of more strokes and heart attacks; or both.

Let's concentrate on cost. The government is looking desperately for ways to reduce its Medicare expenditures. And in everything it says about the danger of bankruptcy, it never mentions that Medicare was the government's own idea. It was Congress and the Administration in the 1960s that decided people 65 and older had to be taken care of. So they invented Medicare, and with it, promised to pay for the basic medical care of everyone of the right age regardless of their financial circumstances. Later on they added the disabled, and those needing kidney dialysis.

Those promises no longer count. The program is in financial trouble, just as we told them it would be. But they do not blame the program. They blame us and the rest of the health care system.

Business is doing approximately the same thing. When health insurance became the darling of every corporation, employers fell over

one another to provide the best, the most generous, the most comprehensive first-dollar programs to their employees and members of their families.

Politicians, too, promised to take care of all the health needs of all their constituents. But like many of the government's promises, those do not count any more, either. The government is coming up with ideas like "participating physicians," which means the ones who accept assignment. And fee schedules for clinical laboratory services. And higher Part B premiums. And changing the initial eligibility date for Medicare entitlement. And limiting increases in hospital reimbursement. And reductions in matching payments to states for Medicaid. And they've already started the DRG program for hospitalized Medicare patients.

Businesses are also coming up with their list of ideas. They are forming PPOs, to pay negotiated fees to physicians and hospitals for services. And to limit employee choice of physician and hospital. They are reducing insurance programs. They are cutting back on benefits. Or they are making employees pay more of the premium . . . or pay more for care when they get it. They are supporting HMOs.

The situation gives us two huge challenges. One is to come up with ideas of our own to help control the cost while maintaining quality. The other is to fight the ideas we see as harmful to patient care. Ideas that would limit access to care. Or that might force people to avoid care because they cannot afford their part of the cost. We have had no shortage of ideas within our own profession. And some of them are causing additional problems — or challenges — depending on the word you prefer.

For the first time in my memory certainly, and I think perhaps for the first time in history, there is actual, aggressive competition among physicians. Between physicians and hospitals. And among hospitals.

According to the latest figures compiled at the AMA, there are about 11,000 group practices of three or more physicians. Almost 300 HMOs involve more than 50,000 physicians taking care of more than 12 million patients. Ten percent of our colleagues are involved in PPOs. Seven percent operate in ambulatory surgery centers, performing a quarter of a million procedures a year. And 9% participate in 1,100 freestanding emergency care centers.



That doesn't cover the whole scene. There are now freestanding offices and clinics in shopping malls and other high-traffic locations. There are urgent care clinics . . . and birthing centers . . . and other specialized centers. All of these physicians are competing with the traditional office-based physician . . . and one another.

Maybe it's good for the patient.

It sure will keep physicians on their toes. Because whatever kind of practice they are in, they have to figure out how they can serve their patients better than some of the others.

Dealing with these factors is a real challenge to the physician. It is perhaps an even greater challenge to medical societies. Your job is to develop policies and construct programs so you can appeal equally to all Iowa physicians, no matter what kind of practice they have. The group member, the solo practitioner, the PPO member, the IPA member, the HMO employee, the hospital-based physician — all need strong medical associations at local, state and national levels. And medical associations at every level need the support and membership of every kind of physician.

Physicians are united in their need to oppose proposals and ideas of either government or business that will harm them, and their ability to provide patient care. Only through strong, combined efforts can the medical profession hope to hold off movements that would either destroy us, or so weaken us that we can no longer do what has to be done for our patients.

And only through strong, combined effort can medical organizations and their members devise programs and projects and supply the information and services that all physicians need to do their job the best possible way. I mean information on cost-effective practice management; demographic information about various locations; courses on using computers, and all of the other things a hard-working association does for its members.

We saw an outstanding example of professional concern in April when the U.S. House of Representatives was considering the mandated assignment proposal. This would have hurt Medicare patients and other patients because of its hospital-privileges penalties. About 125 physicians flew into Washington, D.C., to buttonhole their congressmen. They came from 39 state medical associations and eight specialty societies. They did a great job of

showing their congressmen how wrong mandated assignment would be for patient care. And the House overwhelmingly turned down the idea.

We produce a regular Cost Effectiveness Bulletin, sharing good ideas among medical societies, hospitals and others. We are follow-

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*"We are offering our positive ideas. In March, the AMA asked all of us to freeze our charges for a year. And to give special consideration to patients who are unemployed, uninsured or covered by Medicare."*

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ing through on the economic grand rounds program under the cost-effectiveness network among hospital medical staffs and administrators. We work with state and county societies to develop and strengthen really workable community-based health care coalitions so that we and insurers and hospitals can work closely with business, rather than all of us trying to work against one another.

We meet annually with medical specialty societies to help them develop cost-effectiveness programs. And we are moving from the basic principles phase into the working programs phase of the Health Policy Agenda for the American People. It was only at our instigation that 150 organizations have come together to try to create a blueprint for the future of high quality medical and health care, provided in the most effective and economical ways.

Individual physicians cannot do those things alone. They can only be done through the cooperative effort of all members of the profession by their professional associations at local, state and national levels.

It is harder to be a physician today than it ever has been. It's going to become a lot harder if many of today's proposals become tomorrow's realities. That is why we have to stick together. And work together. And meet together. And talk together.

The thing we hold most dear is the care we give to our patients. If we don't stand side by side to protect them . . . nobody else will. As long as we stand together . . . work together, always remembering that first of all (and most of all), we serve our patients . . . as their advocate . . . to assure that they *always* receive care of the highest quality . . . so long as we do this, we have little to fear from outside forces.

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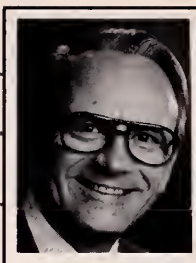
Marion E. Alberts, M.D.

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## COMMENTING EDITORIALLY

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### HOT CROSS BUNS

**T**HE HUMIDITY inside a plastic diaper is the same as that inside an orchid hothouse. Warm moist skin becomes soggy like dishpan hands, resistance is lost, irritation and inflammation ensues, and the affected area is easy prey to all kinds of infections. Jay M. Arena, M.D., past president of the American Academy of Pediatrics, and renown professor of pediatrics at Duke University, made these comments recently. Plastic diapers may be convenient, but my experience as a general pediatrician confirms Dr. Arena's observations about diaper dermatitis. I see more cases than I did a number of years ago, and many are due to yeast.

It is estimated that by the age of 2½ years a baby will spend 2,000 hours in diapers, and will require 13,000 diaper changes. The skin

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*"Plastic diapers are called 'disposable.' They are not disposable; they are not biodegradable."*

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functions as the largest single organ of the body. The average total surface area of a one-year-old is slightly under 0.5M<sup>2</sup>. By the "rule of 9's" the area covered by a diaper would be about 20% of that. Too often parents, as well as many physicians, fail to recognize the extent of skin involvement.

Plastic diapers are called "disposable." They are not disposable; they are not biodegradable. It is estimated that plastic diapers fill 5% of solid waste sites across the country. Ten billion plastic diapers are manufactured each year. That constitutes 556,000 tons of non-biodegradable plastic and 140,000 tons of

sludge, according to a news release from the National Institute of Infant Services. Of course, the mission of that group is to promote the use of cotton diapers, but their point is well taken.

Synthetics, in general, have created a problem. What are we to do with all the "disposable" syringes, speculae, tubing, and other items we use in our profession? Our profession is not the only one relying on synthetics; it is a universal problem, and getting more wide-

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*"Babies do not deserve sore little hind ends; our world does not deserve to become a massive junk-yard."*

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spread. Somewhere, somehow, the human race must face reality. To make life "easier," we develop complexities for which there are no answers. The environment is becoming overwhelmed by substances which cannot be destroyed without creating health hazards, or hidden from sight because there is no room for that. We hear discussions of disposing wastes far out at sea; but what of that environment and the sea life? The outer spaces have become dumping grounds for waste items from outer space probings. So far I haven't heard of anyone suggesting the use of the Grand Canyon as a massive "dump." Heaven forbid!!

Our world used to be simple. We used the excreta of animals for fertilizer (instead of dangerous chemicals). We reused containers for many and sundry uses. We cleaned, sterilized, and reused most items in our hospitals. We speak of cost-effectiveness but it would now appear that the overall long-term costs will be beyond our present comprehension.

Let us all dwell upon the consequences of "disposable" items. Babies do not deserve sore little hind ends; our world does not deserve to become a massive junk-yard. — M.E.A.



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## A TRIBUTE TO DR. SEIBERT

*Cecil W. Seibert, M.D., Waterloo, died April 18, 1984. Service as president and chairman of the board of the Iowa Medical Society was part of Dr. Seibert's noteworthy professional career. The following tribute to Dr. Seibert has been written by Craig D. Ellyson, M.D., a Waterloo colleague.*

THE ACHIEVEMENTS of Dr. Seibert are well known to those Iowa physicians who have followed matters related to the delivery of medical care in Iowa over the past 20 or so years. Dr. Seibert was at the forefront of Iowa medicine during much of the 1960's and 1970's.

Given his capacity as a medical leader, my wish is to point up Cec's qualities as a compassionate physician. His ability to relate to patients and to remove fear and uncertainty from birthing and needed surgical procedures will stand as model to future physicians. He was a gentleman and a gentle-man. He was responsive to needs about him; he could respond adeptly to the writer wanting information on the delivery experience; he could counsel wisely those faced with cancer — a talent which extended into the founding and guiding of the Cancer Society's lay organization in its early years.

Those associated with Dr. Seibert in the work of the Iowa Medical Society marveled at his ability to get a job done with a minimum of

fanfare. He served on the IMS Judicial Council. He served on the Board of Trustees during the planning and construction of the new Society headquarters building.

Dr. Seibert was blessed with an even-temperedness few of us possess. But if roused to support a belief or principle, his position was readily identifiable and his nature was to pursue it actively, yet without excessive commotion.

The relationship of Dr. Seibert to his wife and family was of enviable status. Their closeness was filled with love and concern for one another.

Dr. Seibert's final illness was evident long enough to allow for several well-deserved honors. The C. W. Seibert Library was designated at Allen Hospital. The Seibert Birth Center will serve as a memorial at St. Francis Hospital. The Waterloo Chamber of Commerce named him Citizen of the Year in November, 1983.

He was a born teacher, respected by his peers and students. On retirement he opted to be part of the Black Hawk Family Practice Residency Program, teaching in obstetrics and gynecology.

Shortly before his death, Dr. Seibert had a lunch date at McDonald's with his youngest grandson, Scotty. His family thought the outing might be too strenuous. Cec was adamant, "No, Scotty and I have this date and we're going to do it today, not next week!"

*We salute you, Cec Seibert.*

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## ALL ABOUT RETIREMENT

QUITE A FEW YEARS ago, a famous American bacteriologist named Hans Zinsser wrote an autobiography (in the third person) entitled *As I Remember Him*. He had led a productive and eventful life, but the last chapter of the book was devoted to the final year of his life as he slowly died from leukemia.

He had been returning from Europe on an ocean liner when he noticed he was not tanning as were the other passengers. Upon returning to his laboratory in Boston, he promptly confirmed his suspicion with a blood smear:

he had leukemia, in those days both an incurable and untreatable disease.

He found his final year, in some respects, to be his most rewarding, for he had a heightened awareness of the wonders all about him, marvelous sights and sounds that heretofore he had been too busy to notice — the song of a bird, the blooming of a flower, an almost endless demonstration of the awesome magic of nature.

Retirement, fortunately, isn't exactly like dying from leukemia, but as one gradually winds down his life, with Alzheimer lurking in the shadows, he can find retirement, not a time of boredom and despair, but truly a time of

*(Please turn to page 246)*

sharpened awareness and insight. Nor is it all birds and flowers. Values change, and lots of little things enter the picture — fascinating inconsequential matters, confusing paradoxes, intriguing discoveries, breath-taking opinions. For instance . . .

Did Santa say "Rudolph with your nose so bright, *will* you guide my sleigh tonight?" or did he say "Rudolph with your nose so bright, *won't* you guide my sleigh tonight?" Well, it makes no difference, for an obvious grammatical anomaly is involved here. The meaning is the same no matter which of the completely contrary words (*will* or *won't*) is used. That's amazing! How easy it would have been to pass this over without a second thought.

This is pretty heavy stuff, but let us move right along. Certain children's story books have a "scratch and sniff" innovation. If a picture of a chocolate cake appears in the story, the odor of chocolate can be elicited by scratching and sniffing the picture. And that's not all. The odor soon disappears, to remain once again bottled-up in the picture, awaiting the

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*"At this point the reader is warned not to read further unless he or she is not repelled by a discussion of a very indelicate subject."*

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next scratch. As different pictures are encountered in the story — oranges, grapes, gingerbread, or whatever — the distinctive and appropriate odors can be released and identified by scratching and sniffing. And to think that we always thought fiber-optics and the CAT scan were wonderful!

At this point, the reader is warned not to read further unless he or she is not repelled by a discussion of a very indelicate subject — urination, and unless he or she is uncommitted to the ERA philosophy, at least to the extent that he or she is willing to sanction medical research relating only to the male. Assuming that the above warning has been heeded, we can now proceed.

This particular research involved a study of only one case, a male, but first some background information: A gun has spiral grooves within its barrel which impart a spin or rotation

to the shell. If this were not done, the shell would tumble and flop through the air end over end, completely impairing its accuracy and velocity. Now to return to the case.

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*"Although the process of urination is of little critical interest to many (it is such a normal and drab process) there are others, particularly in the older male age group, for whom urination is a compelling way of life."*

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Research on this one case revealed that the urine, as it emerged under pressure from the urethral meatus, was spiralling. The direction of the spiral was thought to be to the left, but that feature will require further study. Although the process of urination is of little critical interest to many (it is such a normal and drab process), there are others, particularly in the older male age group, for whom urination is a compelling way of life. But young or old aside, this previously unreported observation raises a critical question: is the interior of the urethra, like the interior of a gun, grooved?

Two pertinent references were reviewed — *Gray's Anatomy* and *Campbell's Urology*. Gray mentioned longitudinal mucosal folds, but neither mentioned grooves within the urethra, nor even the spin of the urinary stream. A urologist was not consulted, although it would appear to have been a logical thing to do, because there was uncertainty as to whether or not a urologist might consider this research to be an encroachment on his territory. After all, who can predict the thinking of a person who elects to spend the better part of his professional life with his face in someone's perineum?

Further research is needed on this matter, but, until that is done, we can only be thankful for the spiralling action that prevents our urine from tumbling and flopping in the air as it emerges from the urethral meatus.

Friends — now you know all about retirement. It can be summed-up by borrowing a phrase from a little girl who, when asked by her parents how she had liked a movie of somewhat uncertain quality, responded by saying, "Well — it was better than cooked carrots." So too is retirement. — DANIEL F. CROWLEY, M.D.



Before prescribing, see complete prescribing information in SK&F CO. literature or PDR. The following is a brief summary.

**\* WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum  $K^+$  levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict  $K^+$  intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak toluic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

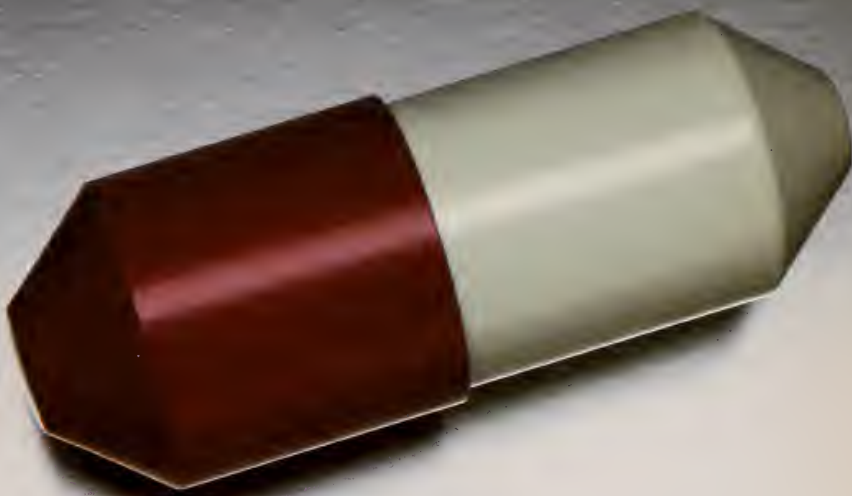
**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

**Supplied:** 'Dyazide' is supplied in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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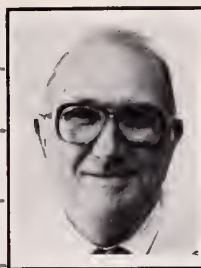
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Norman C. Johnson, Pharmacist

## QUESTIONS AND ANSWERS



### DRUG REGISTRATION REVIEW

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*Just to keep Iowa physicians mindful of what ongoing requirements must be met to stay legal, Norman C. Johnson, drug control program administrator for the Iowa Board of Pharmacy Examiners, has kindly answered several pertinent questions.*

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#### **For what must Iowa physicians be registered in this area?**

Every Iowa physician who administers, prescribes or dispenses any controlled substance must be registered under both state and federal Controlled Substance Acts. Federal registration is with the Drug Enforcement Administration (DEA). State registration is with the Iowa Board of Pharmacy Examiners.

#### **How frequently must these matters be considered?**

Registrations must be renewed annually and the certificates must be maintained at the registered location. Registration is for a specific practice location. Physicians who administer or dispense controlled drugs at more than one practice location must obtain a registration at each practice address. Physicians who administer or dispense controlled drugs at one practice location but only prescribe at a second practice address need only to register at the site where controlled drugs are administered or dispensed. Physicians who make a change in their practice location must obtain either a new registration or a modification of their current registration.

#### **Please remind us of the Iowa registration procedures?**

Physicians currently registered under the Iowa Controlled Substances Act are mailed applications in late July or early August each year. The registration period runs from October 1 through September 30. The current annual registration fee is \$25, with a \$5 penalty if the application is postmarked after October 1. Information on new or renewal registrations is available from Iowa Board of Pharmacy Examiners, Controlled Drug Division, State Office Building, Des Moines, Iowa 50319.

#### **What about the federal registration procedures?**

Information and registration applications can be obtained by contacting the DEA office at the following address: Department of Justice, Drug Enforcement Administration, Suite 200, Chromalloy Plaza, 120 S. Central Avenue, St. Louis, Missouri 63105.

#### **What is required with a change of practice location?**

Both state and federal agencies need to be notified whenever a physician changes his or her practice location or when additional offices are opened.

#### **Finally, what about physicians moving into Iowa?**

Those physicians who move to a practice location in Iowa and who have a DEA registration assigned them at another practice location may request DEA to modify their registration to reflect the address change. Physicians moving to Iowa from another state may also contact the Iowa Board of Pharmacy Examiners for additional information on the procedure for modifying a current DEA registration.

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# Adult Pyloric Stenosis: A Case Report

B. K. WASILJEW, M.D.,

S. S. LEE, M.D., and

K. T. SONG, M.D.

Mason City, Iowa

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*A 37-year-old white female with prepyloric stenosis is presented. Diagnosis was correctly made preoperatively and patient was successfully treated by Jaboulay pyloroplasty.*

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**P**YLORIC HYPERTROPHY in adults was first described by Cruveilhier over 130 years ago.<sup>1</sup> Since then, several hundred cases have been reported. Only a small number of these had a prepyloric stenosis.<sup>2</sup> A patient with this diagnosis was successfully treated surgically and is reported. This case is discussed in light of pertinent literature.

## CASE REPORT

A 37-year-old white female was seen for a 6-month history of bloating, belching and loose stools. She was initially treated for irritable bowel syndrome. Nine months later the patient developed symptoms of delayed gastric emptying and was empirically treated for

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The authors are associated with North Iowa Medical Center and St. Joseph Mercy Hospital in Mason City, Iowa.

peptic ulcer disease with Cimetidine, antacids and diet. When she did not improve further investigation was carried out.

An upper G.I. series showed persistent prepyloric narrowing with dilated stomach and normal duodenum (Figure 1). Upper endos-



Figure 1. A detailed view of the distal stomach on upper G.I. series showing persistent prepyloric narrowing ("double duodenal bulb").

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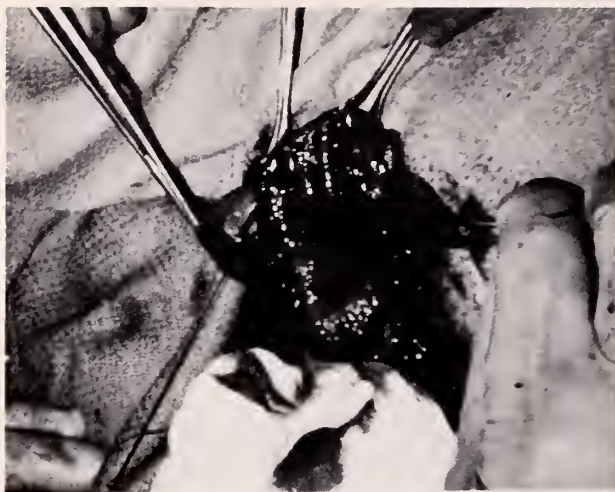


Figure 2. Operative photograph of distal gastrotomy with a pair of forceps in the prepyloric aperture while another instrument is pointing to the true pylorus.

copy revealed a large dilated stomach with biopsy-proven gastritis and a 2-3 mm. pyloric opening that would not allow passage of the scope. No evidence of peptic ulcer disease or malignancy was seen. At that point, the patient was treated with small, frequent liquid meals, and Reglan® but her symptoms did not improve. An upper G.I. series repeated 2 months later showed no change in the prepyloric obstruction. At that time the patient was admitted to the hospital for elective surgery. Physical examination at the time of admission was unremarkable. Routine laboratory studies were within normal limits. At exploration a prepyloric muscular and mucosal stenosis was found without any evidence of inflammation or scarring (Figure 2). A Jaboulay pyloroplasty was performed.

The postoperative course was minimally complicated by delayed gastric emptying. This readily responded to conservative measures and the patient was discharged on the 11th postoperative day. Follow-up after 6 months demonstrated complete resolution of all symptoms.

#### DISCUSSION

Pyloric stenosis is not uncommon in infants but it is quite rare in adults. Most physicians probably never see a single case. There are probably some physicians who are not even aware of this condition in adults.<sup>3</sup> Judd and Thompson in 1933 reported 20 cases from Mayo Clinic. In 1950, North and Johnson reported a complete series of 59 patients while

Hiebert and Farris reviewed 22 cases in 1966.<sup>4, 5</sup> The real controversy in this disease is its etiology. Based on the similar morbid anatomical appearances and sex incidence, one school proposes that adult pyloric stenosis represents a persistence of infantile stenosis.<sup>6</sup> There is some evidence in a portion of subclinical cases the abnormality may persist and be discovered only at autopsy or during a laparotomy for another problem.<sup>1</sup>

The finding of obvious associated ulceration or submucosal fibrosis at the margin of the pyloric aperture suggests that scarring and contraction produce the abnormality.<sup>7, 8</sup> We have found no evidence of ulcer, inflammation or scarring in our patient. Admittedly, no specimen was available for histologic examination.

It is also possible trauma from food could produce superficial ulcerations in an asymptomatic congenital pyloric stenosis.<sup>9</sup> This parallels the late onset of symptoms in some cases of congenital duodenal diaphragm.

A number of other possible explanations have been put forth in the literature. These include congenital neuromuscular dysfunction of the pylorus, hypervagotonic, allergic, endocrine, psychosomatic and vitamin deficiency states.<sup>4</sup> Lesions of the mesenteric plexus of pyloric region have been demonstrated histologically in some instances.<sup>10</sup> The disease is still considered by some authors to be of unknown etiology.<sup>4</sup> A frequent association with biliary tract disease or hiatus hernia has been reported but not explained.<sup>3</sup>

The true incidence of this condition is indeterminate, as in subclinical cases, it may never be diagnosed. Age range is from 14 to 85 years. Approximately half of the known cases are between 40-50 years of age with males predominant at a ratio of 19:1 to 3:1.<sup>3</sup>

There is no symptom or group of symptoms which would aid in making a confident preoperative diagnosis.<sup>1</sup> Vomiting over a long period of time without typical ulcer symptoms might provide the clue to this diagnosis. Discomfort after large meals is common.<sup>2</sup> Other complaints include anorexia, epigastric fullness, dyspepsia, frequent eructations and weight loss. In one quarter of the reported cases some symptoms have been present since infancy.<sup>3</sup>

The diagnosis cannot be made on the basis of a physical examination which is generally normal.<sup>11</sup> Epigastric tenderness and succus-



sion splash are usually absent but if present are not specific. No pyloric tumor has ever been palpated reliably in an adult.

The correct diagnosis may be easily made by a barium meal if it shows the typical appearance of 2 duodenal bulbs, the proximal one being the compartment between the area of stenosis and the normal pylorus. Endoscopy will confirm the radiographic picture of a fixed, 1-3 mm. opening without scar or inflammation. Both of these studies suggested the correct diagnosis preoperatively in our patient.

The treatment of this condition is surgical. A number of operations have been suggested and tried with varying results. The general consensus is that adequate exploration via gastrotomy must be performed as in some cases the outside appearance may be normal. Simple dilatation of the pylorus was abandoned because of high failure rate. A pyloromyotomy may lead to development of diverticulum and is not recommended for adults. The results of various types of pyloroplasties are generally satisfactory. A Jaboulay pyloroplasty (gastroduodenostomy) as employed in our patient is particularly useful as its 2 incisions allow a complete examination of prepyloric and duodenal lumen prior to the definitive procedure. A gastroenterostomy may be adequate treatment, especially in poor risk patients.

Some authors feel gastric resection in good risk patients is the procedure of choice as it allows tissue examination, removes the entire pathologic entity and treats associated conditions as ulcers.<sup>1, 3</sup> The authors of this article feel neither resection nor vagotomy are indicated in the absence of ulcer disease and would only subject patients to unnecessary risks and possibly long-term complications. If there is some suspicion of associated ulcer, however, then a vagotomy may be an excellent complementary procedure to pyloroplasty.

#### SUMMARY

A 37-year-old white female with prepyloric stenosis is presented. The diagnosis was correctly made preoperatively on the basis of history, endoscopy and barium meal. Patient was successfully treated by Jaboulay pyloroplasty. The clinical picture, diagnosis and treatment of this interesting condition are discussed along with available literature.

#### REFERENCES

The references noted in this paper are available on request either from the authors or IOWA MEDICINE.

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# The Morbidity of Membrane Stripping

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*Membrane stripping for the induction of labor in 179 low risk women at term was not found to increase either maternal or neonatal morbidity when compared to a control group of 249 women who did not undergo the procedure.*

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**D**IGITAL SEPARATION of the membranes from the lower uterine segment or membrane stripping as a clinical practice used to induce labor was first suggested by James Hamilton in 1810.<sup>1</sup> Unlike other methods for initiating regular uterine contractions, membrane stripping has not been studied extensively. The studies so far have focused almost exclusively on effectiveness, with little attention to maternal and fetal morbidity.<sup>2, 3, 4</sup> Even if this procedure is somewhat effective, it should be abandoned if it is associated with an increase in morbidity.

Our principal concern was the possibility of an increased incidence of premature rupture of the membranes. Membrane stripping could cause weakening of the membranes and premature rupture, leading to an increase in the need for therapeutic induction of labor and the

risk of prolonged rupture with attendant maternal or neonatal sepsis. Other potential problems were an increased risk of prolonged or dysfunctional labor, premature labor and delivery if gestational age was not assessed correctly, inadvertent rupture of membranes with cord prolapse or hemorrhage from an unsuspected placenta previa.

The purpose of this study, in a group of women at low risk for obstetric complications, was to identify maternal or neonatal complications resulting from membrane stripping.

## METHODS

An observational study was carried out at the University of Iowa Hospitals and Clinics between October, 1980 and November, 1981. Individual physicians were asked to prospectively record at each pelvic examination after 36 weeks the following information: time of examination, a description of the dilatation and effacement of the cervix, and whether or not the membranes were stripped.

A total of 423 pregnant women at low risk were studied. Patients with specific contraindications to membrane stripping were excluded from the study, including patients with a history of prior cesarean section, a history of third trimester bleeding, and a history of premature labor or premature cervical dilatation. All patients considered to be obstetrical risks from other causes also were excluded.

The decision to perform membrane stripping was made by the examining physician based on his or her judgment. There was no attempt at randomization. At the end of the time period 2 groups were defined. The study group consisted of 174 patients who had

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The authors are associated with the Department of Obstetrics and Gynecology at University of Iowa Hospitals and Clinics.



TABLE I  
INTRAPARTUM AND POSTPARTUM MATERNAL COMPLICATIONS

	Study Group (174)	Control Group (249)	p
Premature rupture of membranes	26 (15%)	37 (15%)	NS*
Prolonged rupture of membranes	7 (4%)	8 (3.2%)	NS
Prolonged latent phase of labor	3 (1.7%)	3 (1.2%)	NS
Prolonged first stage of labor	4 (2.3%)	7 (2.8%)	NS
Oxytocin stimulation of labor	20 (11.5%)	3 (1.2%)	NS
Amnionitis	0 (0%)	2 (0.8%)	NS
Cesarean section	4 (2.3%)	7 (2.8%)	NS
Endometritis	4 (2.3%)	9 (3.6%)	NS

\* NS = not significant,  $\alpha = 0.05$

undergone membrane stripping. The control group consisted of 249 patients who had cervical palpation, but membranes were not stripped at any examination prior to the onset of labor. Maternal and neonatal charts were then reviewed after delivery for specific complications.

Statistical analysis was done by the Chi-square test or by the student's t-test as appropriate.

#### RESULTS

The study group consisted of 174 patients, 92 primiparas (52.9%) and 82 multiparas (47.1%), and the control group of 249 patients, 142 primiparas (57%) and 107 multiparas (43%). At delivery, the mean gestation based on last menstrual period was not statistically different between the 2 groups (study, 40.5 weeks versus control, 40.3 weeks).

Intrapartum maternal morbid events are summarized in Table 1. Premature rupture of the membranes, defined as rupture prior to the onset of labor, occurred in 15% of both groups. Prolonged rupture of membranes, defined as rupture of membranes for more than 24 hours prior to delivery, occurred in 4% of the study group and 3.2% of the control group. No patient with either of these complications required oxytocin induction of labor.

Prolonged latent phase, defined as greater than 20 hours in the nulliparous patient and greater than 14 hours in the parous patient, was seen in 1.7% of the study group and 1.2% of the control group. An equal percentage of patients in both groups required oxytocin stimulation for the diagnosis of dysfunctional labor in the active phase.

Amnionitis was diagnosed by the presence of maternal fever associated with uterine

tenderness. No patients in the study group and 0.8% of the control group developed amnionitis. There was no difference in cesarean section rates between the groups.

There was no statistical difference between the study and control groups in any of the intrapartum maternal morbid complications.

Fetal intrapartum complications are summarized in Table 2. Significant heart rate abnormalities included prolonged bradycardia, severe variable decelerations or persistent late decelerations documented by electronic

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*"Although our study design did not include random selection of patients for either group, both groups were similar in gestational age, parity, and absence of obstetric risk factors."*

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fetal monitoring. These heart rate abnormalities occurred in 16.1% of the study group and 15.3% of the control group. Fetal distress, defined as a fetal scalp pH of less than 7.20, was found in equal percentages of both groups. All 14 of the patients with fetal distress were delivered vaginally and none evidenced amnionitis or placental abruptio. Apgar scores in this group were all greater than 7 at 5 minutes and the neonatal hospital courses were uneventful. Meconium staining of the amniotic fluid was seen in 6.3% of the study group and 3.3% of the control group. There was no statistical difference between either group in looking at these 3 fetal intrapartum complications.

Table 2 summarizes the neonatal complications. Sepsis requiring antibiotic therapy occurred in 4.6% of the study group and 4.4% of the control group. There was no statistical difference in the number of neonates requiring

phototherapy for hyperbilirubinemia. Respiratory distress requiring ventilator assistance occurred in equal proportions of both groups. None of these 3 infants had Hyaline membrane disease. There were no neonatal deaths.

Neonatal population data is shown in Table 3. There were no significant differences between the study and control groups in gestation age by Ballard exam, 5 minute Apgar scores, or length of infant hospital stay. Infants born to nulliparous control subjects were smaller than those born to nulliparous study subjects, although gestational ages by both menstrual history and Ballard exam were similar.

favorable cervixes in Groups I and II did go into labor more often within 48 hours than the control group.

#### DISCUSSION

Our data suggests there is no increased maternal or neonatal intrapartum or postpartum risk due to the performance of membrane stripping. We were primarily concerned about the risk of premature rupture of membranes and found this occurred in equal numbers of patients in both groups, and further the infectious complications that might result from premature and/or prolonged rupture were present in equal numbers in both groups. In addition,

TABLE II  
INTRAPARTUM AND NEONATAL FETAL COMPLICATIONS

	Study Group (174)	Control Group (249)	p
Mecanum	11 (6.3%)	22 (8.8%)	NS*
Abnormal fetal heart rate†	28 (16.1%)	38 (15.3%)	NS
Fetal scalp pH <7.2	5 (2.9%)	9 (3.6%)	NS
Sepsis requiring antibiotics	8 (4.6%)	11 (4.4%)	NS
Hyperbilirubinemia with phototherapy	8 (4.6%)	18 (7.2%)	NS
Respiratory distress	1 (0.5%)	2 (0.8%)	NS
Neonatal death	0	0	NS

\* NS = not significant,  $\alpha = 0.05$

† prolonged bradycardia, severe variable or persistent late decelerations

Postpartum morbidity is reviewed in Table 2. Endometritis was defined as standard febrile morbidity with compatible physical findings. This was seen in 2.3% of the study group and 3.6% of the control group. Mean maternal hospital stay was similar in the 2 groups.

The interval between the onset of labor and either the last cervical exam in the control group or membrane stripping in the study group was examined. Membrane stripping was defined to be "effective" if labor began within 48 hours after membrane stripping. Groups of similar parity and cervical condition were then compared as shown in Table 4. Group I was defined as a cervical dilatation of less than 2 cm. and less than 50% effacement. Group II was described as greater than 2 cm. but less than 3 cm. dilatation and less than 100% effacement. Group III was described as greater than 3 cm. and 100% effacement. Patients in Group III, that is those with the most favorable cervixes, did not go into labor more often within 48 hours if the membranes were stripped. However, study patients with less

we did not observe an increase in the incidence of other serious complications that have been suggested as risks of membrane stripping, i.e. placental abruptio, cord prolapse or iatrogenic prematurity.

The limitations of our study design should be noted. While our sample size was adequate to detect a statistically significant difference between the 2 groups in a complication occurring as frequently as premature rupture of the membranes estimated to occur in 10-15% of all term pregnancies, complications that occur as infrequently as cord prolapse or placental abruptio cannot be adequately assessed in a sample this size. Although our study design did not include random selection of patients for either group, both groups were similar in gestational age, parity, and absence of obstetric risk factors. Thus, both study and control groups were representative of our low risk obstetric population.

Previous studies have not examined the morbidity of membrane stripping in detail. Swann at our institution in 1958 compared 147



TABLE III  
NEONATAL INFORMATION (MEANS  $\pm$  Standard Deviation)

	n	Weight (gms)	Ballard*	5' Apgar	Hospital Stay
Nulliparas					
Study	92	3495 $\pm$ 420†	38.9 $\pm$ 5.7	8.6 $\pm$ 1.1	3.5 $\pm$ 1.5
Cantral	147	3295 $\pm$ 599	39.4 $\pm$ 3.6	8.5 $\pm$ 1.1	4.0 $\pm$ 2.3
Multiparas					
Study	82	3522 $\pm$ 502	38.3 $\pm$ 6.6	8.7 $\pm$ 0.7	3.5 $\pm$ 2.14
Cantral	92	3410 $\pm$ 495	38.4 $\pm$ 6.6	8.7 $\pm$ 0.5	3.5 $\pm$ 1.78

\* gestational age by neonatal Ballard examination (weeks  $\pm$  days)

† p < 0.01 comparing nulliparous study and cantral subjects

patients who underwent daily membrane stripping for 3 days with 74 "control" patients in order to assess the effectiveness of this procedure.<sup>2</sup> Sixty-nine percent of the study patients had the onset of labor within 24 hours of the last stripping as compared with 31% of the control group. The study was not randomized, and so conclusions about effectiveness cannot be made. Morbidity described in this study included antepartum fever in 2 patients and cord prolapse during labor in 1 patient. This latter complication was not clearly related to the membrane stripping. The author raised concern about unrecognized placenta previa or inadvertent rupture of the membranes, but these complications did not occur in any of their patients. There was a single neonatal death of an anencephalic fetus. While Swann concluded there was some increased risk to the mother with the technique of membrane stripping, our statistical analysis of his data does not support this conclusion.

In 1975 Kayser and Trotnow reported a retrospective analysis of 1,240 women who underwent membrane stripping prior to labor, as compared to 8,920 women who did not.<sup>3</sup> They reported data for only 2 morbid events, postpartum maternal morbidity and 5-minute Apgar scores. There was no difference between the 2 groups for either of these 2 situations.

Finally, Weissberg and Spellacy evaluated 91 patients in a randomized study to evaluate the effectiveness of membrane stripping in inducing labor.<sup>4</sup> They found a significant increase in the onset of labor in the subgroup of patients with low Bishop scores. However, the overall success rate for labor induction in the membrane stripping group was not significant compared to controls when the data was ana-

TABLE IV  
ONSET OF LABOR WITHIN 48 HOURS OF LAST EXAM, COMPARING SUBGROUPS WITH SIMILAR CERVICAL STATUS

	Study Group	Cantral Group	p
Primigravida			
$\leq 2/50\%$ *	55%	8%	<0.001
$> 2/50\%$	70%	24%	<0.001
$\geq 3/100\%$	80%	71%	NS†
Multigravida			
$\leq 2/50\%$	58%	13%	<0.001
$> 2/50\%$	80%	25%	<0.001
$\geq 3/100\%$	82%	86%	NS†

\* centimeters dilatation/percent effacement

† NS = not significant,  $\alpha = 0.05$

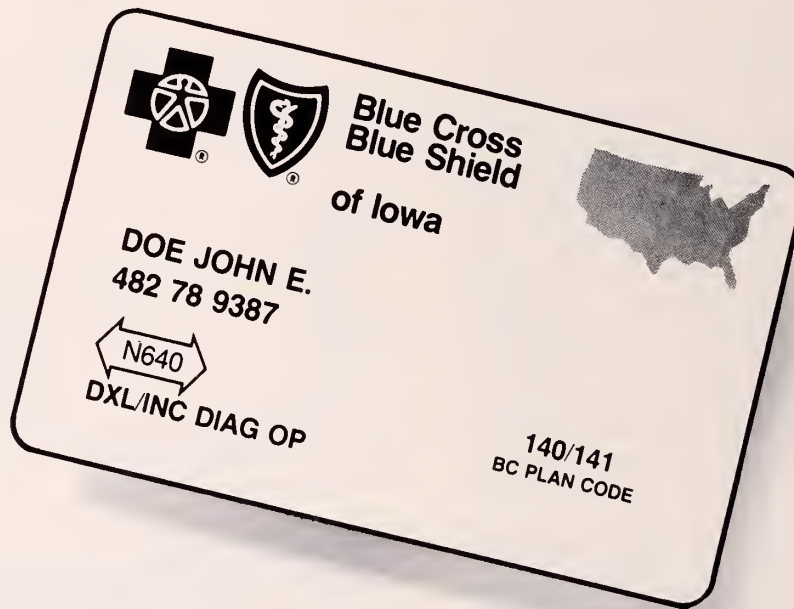
lyzed independent of cervical condition. The authors stated morbidity was not increased in the study group, but they did not present any morbidity data.

In conclusion, our observational study of 423 low risk pregnancies suggest there is no increased maternal or neonatal risk associated with the performance of membrane stripping at term. Although our design was not appropriate for the evaluation of the effectiveness of this procedure, other studies have suggested in certain groups of patients this procedure may have some usefulness. There appears to be no contraindication to its use in an otherwise normal woman at term.

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Richard M. Caplan, M.D.

## OUR MAN IN EDUCATION



### GEORGE ORWELL, SIGMUND FREUD AND MEMORY HOLES

**T**HE TIME came. For over a year I'd planned to reread George Orwell's *1984*. My first reading happened within a few years after its appearance in 1949. Memories of Hitler were still vivid. The cold war had begun and was making earnest "progress." The "brainwashing" of the Korean War period was shortly to reach the public. The book's statement (anti-totalitarianism) and warning were powerful. The totally simplified language Orwell described ("Newspeak") and the eradication of older language ("Oldspeak") and all other foreign languages provided a grim prospect. The advent of television and modern monitoring devices made it possible to believe in the development of a Thought Police far more pervasive and brutal than the Gestapo or the KGB.

And so my time for rereading arose. Yes, *1984* is still a thriller and a horror story. The message is all — the plot and the political theory far outweigh character development. It may be correct and not unkind to say that Orwell was, after all, an essayist, a journalist and a politically passionate man rather than an exquisite portrayer of character like Solzhenitsyn.

But the message and the warning remain fresh. We compare our world and our American society to Orwell's *1984* and find that as a prophet he missed the mark in some important ways, for *1984* anyway. No matter. Some of you, if asked to give an example of his concept of "Doublethink," might respond "quality of

care and cost containment" or "DRG's and exercise of professional judgment." Whether those couplings should properly be submitted as examples of "Doublethink" I leave for you to decide. If you need to read or reread *1984* to make such a decision, then by all means, have at it.

Another of Orwell's imaginative phrases that seems of interest to medical (or any) education, is the concept of "memory holes." His protagonist, Winston Smith, worked for the "Ministry of Truth" whose mission was to "control the past" by modifying all historical

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*"Such memory holes might be thought to exist in each of our heads. I suggest they are most commonly conceived as a passage or tunnel from one ear to its opposite."*

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records so that nothing, absolutely nothing, would remain of any sort, except as it told the Party's story according to its situation of the moment. All telltale information and documents were permanently eradicated by being dropped into wall slots called "memory holes."

Such memory holes might be thought to exist in each of our heads. I suggest they are most commonly conceived as a passage or tunnel from one ear to its opposite so that "what comes in one ear goes out the other." But such metaphoric tunnels, lacunae, or non-connecting circuits must be available throughout the brain because so much sensory data of any sort seems permanently losable in the rabbit warren of "memory holes" in our brains. An enormous amount of the medical information (education) to which we expose ourselves seems to fall into these holes. (That's as true for those who have "normal" as those with "good," let alone "photographic," memories.)

*(Please turn to page 265)*

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

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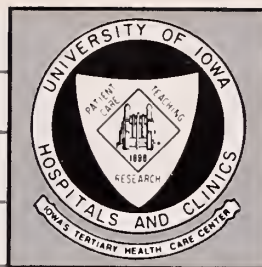
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## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### NICOTINE GUM AS AN ADJUNCT IN SMOKING CESSATION

**N**ICOTINE GUM (Nicorette), developed in 1973 and recently approved as a prescription drug by the FDA, has been used successfully by some smokers to diminish nicotine withdrawal symptoms and prevent relapse during their attempts to stop smoking. Because the gum is being promoted, physicians and pharmacists should be prepared to respond to patients' questions about the gum. When the gum became available in Canada in 1980, over one-half of the prescriptions written for Nicorette were at the request of the patient.

#### PHARMACOLOGY

Because nicotine is a natural alkaloid which acts on a number of sites, its actions are complex and sometimes unpredictable. At some sites, particularly the autonomic ganglia, it has biphasic effects, where nicotine initially stimulates, then depresses transmission through the ganglia.<sup>1</sup> The major effects of nicotine are on the central nervous, cardiovascular, and gastrointestinal systems. Central nervous system stimulation is manifested by tremor, and in larger doses, convulsions. In acute poisoning, CNS stimulation of respiration can be followed by respiratory failure due to CNS depression. Increased heart rate and blood pressure result from direct stimulation of sympathetic ganglia and the adrenal medulla. Parasympathetic stimulation by nicotine results in increased

tone and motor activity of the bowel. Nausea and vomiting commonly accompany this increase in GI activity.

#### PHARMACOKINETICS

Nicotine gum is buffered to pH 8.5 to enhance absorption through the buccal mucosa. Ninety percent of the nicotine in a 2-mg piece is absorbed in 30 minutes. Steady-state mean plasma nicotine levels are slightly below the trough levels resulting when smokers smoke at their "usual level."<sup>2</sup> Smoking cigarettes results in a rapid peak of nicotine blood level (15-20 ng/ml). Chewing one piece of Nicorette (2 mg) results in a peak nicotine level of approximately 12 ng/ml after 30 minutes of slow chewing.

Most of the plasma nicotine is metabolized in the liver to cotinine and nicotine-1 'N-oxide, both of which are eliminated in the urine. The lungs and kidneys also metabolize nicotine. The rate of urinary excretion is pH dependent; acid urine enhances excretion. The half-life for nicotine is 30 to 60 minutes.

#### CLINICAL STUDIES

The compulsion to maintain an established smoking habit is to a large extent due to nicotine addiction.<sup>3</sup> Smokers often develop tolerance to the effects of cigarette smoke and many experience withdrawal symptoms when they abstain from smoking. Besides experiencing a tremendous craving for a cigarette, the abstinent smoker may have insomnia, irritability, and difficulty concentrating. Increased appetite usually occurs, leading to an associated weight gain.

Nicotine gum was developed to relieve the symptoms associated with smoking withdrawal and improve abstinence rates. Clinical stud-

*(Please turn to page 260)*

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

ies have shown that abstinent smokers experience less irritability, loss of concentration, and weight gain when using nicotine gum.<sup>4</sup> The 2-mg gum does not seem to affect craving for cigarettes to the extent it does other symptoms of withdrawal.

Clinical trials have demonstrated that nicotine gum does lead to enhanced success rates when used with other smoking cessation strategies. In a double-blind trial using 2-mg buffered nicotine gum or 1-mg unbuffered gum, 27/58 (47%) of the 2-mg gum users vs. 12/58 (21%) of the 1-mg unbuffered gum users were abstinent after one year.<sup>5</sup> Since the nico-

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*"Nicorette is an effective adjunct for smokers attending smoking cessation clinics."*

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tine in unbuffered gum is poorly absorbed, this gum was essentially a placebo. Persons participating in this trial also attended weekly group meetings about smoking cessation. Thus the results can not be generalized to situations other than group programs. Other studies have demonstrated that nicotine gum improves the abstinence rates of smokers attending smoking cessation clinics.<sup>6</sup>

The use of nicotine gum in clinical practice, as opposed to cessation clinics, has been less well studied. In a study by Russell,<sup>7</sup> 2,106 smoking patients of 30 British general practitioners were randomly assigned to one of three groups; control, physician advice plus a booklet about how to stop smoking, and physician advice plus the offer of 2-mg nicotine gum. Those patients receiving advice plus the offer of gum achieved a one-year abstinence rate of 9% as opposed to the 4% rates achieved by the other two groups; however, only 53% of patients actually used the gum. The self-selected group of patients who used one or more boxes of gum (105 pieces) had a 24% one-year abstinence rate. The results of Russell's work are in contrast to the study reported by the Research Committee of the British Thoracic Society. In this randomized study of 1,618 patients attending a chest clinic, the use of nicotine gum did not improve abstinence rates compared to other groups receiving advice, advice plus a booklet, or advice plus placebo gum. All groups achieved about a 10% one-year abstinence rate.<sup>8</sup>

## SIDE EFFECTS

Few, if any, users enjoy the taste of nicotine gum. The taste combined with irritation of the tongue, mouth, and throat will deter some from continuing to use the gum. Nausea, flatulence, or epigastric discomfort occur in about 25% of users, particularly those who chew the gum too rapidly. Occasional patients will develop hiccups and/or dizziness from the gum. In heavy smokers, up to 10% may develop some degree of dependence on the gum; most others stop use of the gum spontaneously.

Since nicotine in high doses can be lethal, overdose was initially of some concern. Since the nicotine contained in the gum base is not released when the gum is swallowed, ingesting several pieces of gum will result in blood levels similar to those maintained by smoking. Although the taste will deter most children, common sense dictates keeping the gum stored safely.

## USAGE

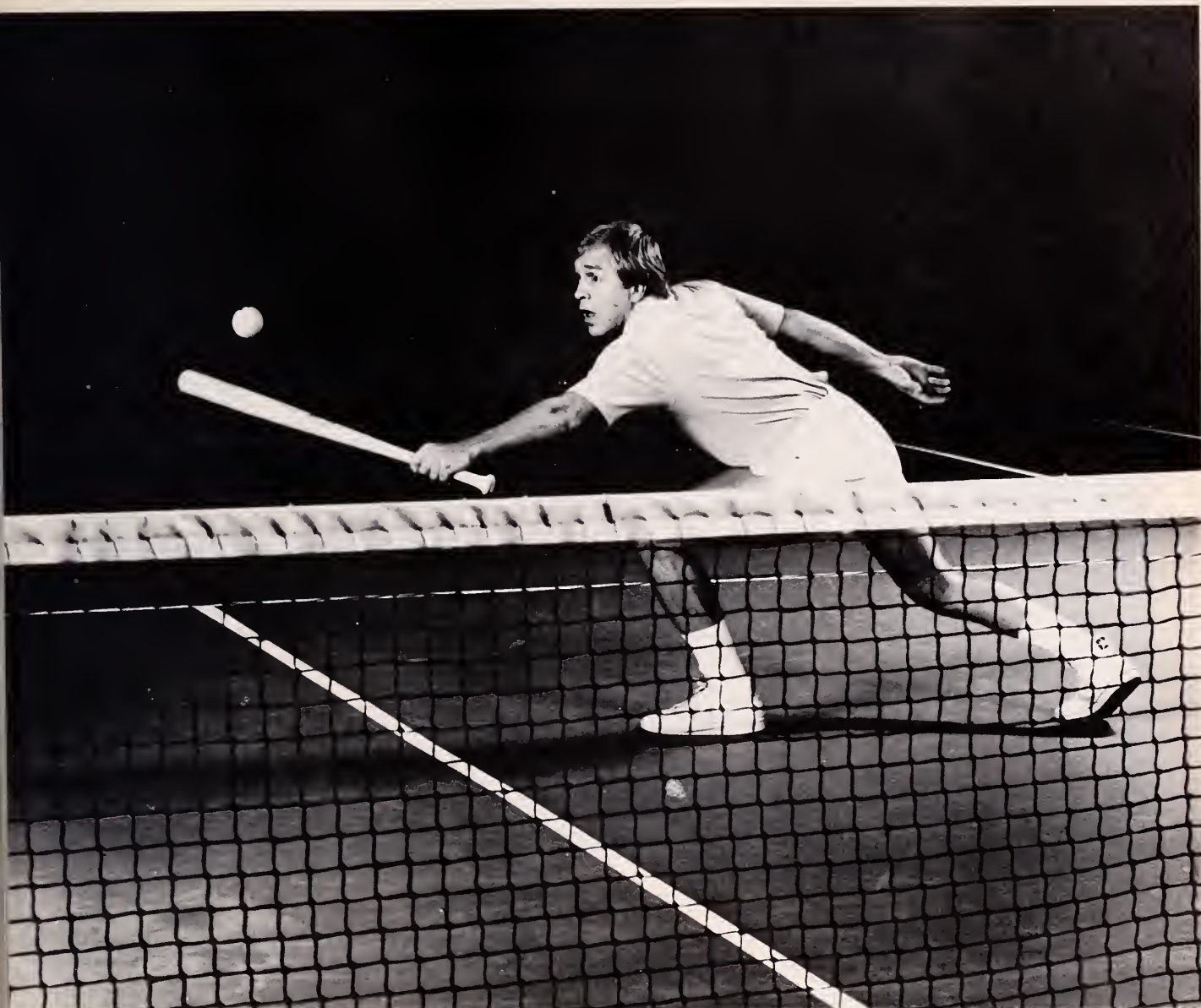
Nicorette will be available only in the 2-mg dosage. Boxes of 96 pieces will cost approximately \$20. To achieve maximum benefit, patients must be motivated and properly instructed on the usage of this product. Each piece must be chewed slowly for 30 minutes for all the nicotine to be released. For best results the gum should be chewed slowly 10 to 15 times, then held in the mouth for about one minute. This process is repeated for about 30 minutes.

Patients should be instructed to chew a piece of gum whenever the urge to smoke arises. Patients will generally use 8 to 10 pieces of gum per day when consumed ad lib. Consumption of over 30 pieces of gum per day should be discouraged since these amounts are no more effective and tend to increase side effects. Future research will determine if a fixed dosage schedule is more effective than ad lib usage. Patients who use the gum for two to three months or more appear to be less likely to relapse, so patients should be encouraged to continue to use the gum beyond the period of acute withdrawal. Some investigators advocate keeping the gum available for at least a year should urges to smoke arise.

Although the nicotine levels achieved with Nicorette are less than those due to smoking cigarettes, the gum should be used with cau-

(Please turn to page 262)





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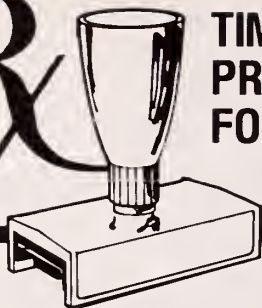
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tion in patients prone to peptic ulcers, with cardiovascular disease, and during pregnancy.<sup>9</sup> Patients with dentures or periodontal disease may have difficulty tolerating the gum because of the amount of chewing required.

### DISCUSSION

Nicorette is an effective adjunct for smokers attending smoking cessation clinics. The results outside of this context are less clear. When combined with a self-help booklet and firm advice to stop smoking, the offer of nicotine gum by the physician may improve the patients' success in stopping from about 5% to 10% after one year. These estimates are based on a trial in which patients received gum without cost. How the expense of the gum will influence the proportion of patients who try the gum is unknown.

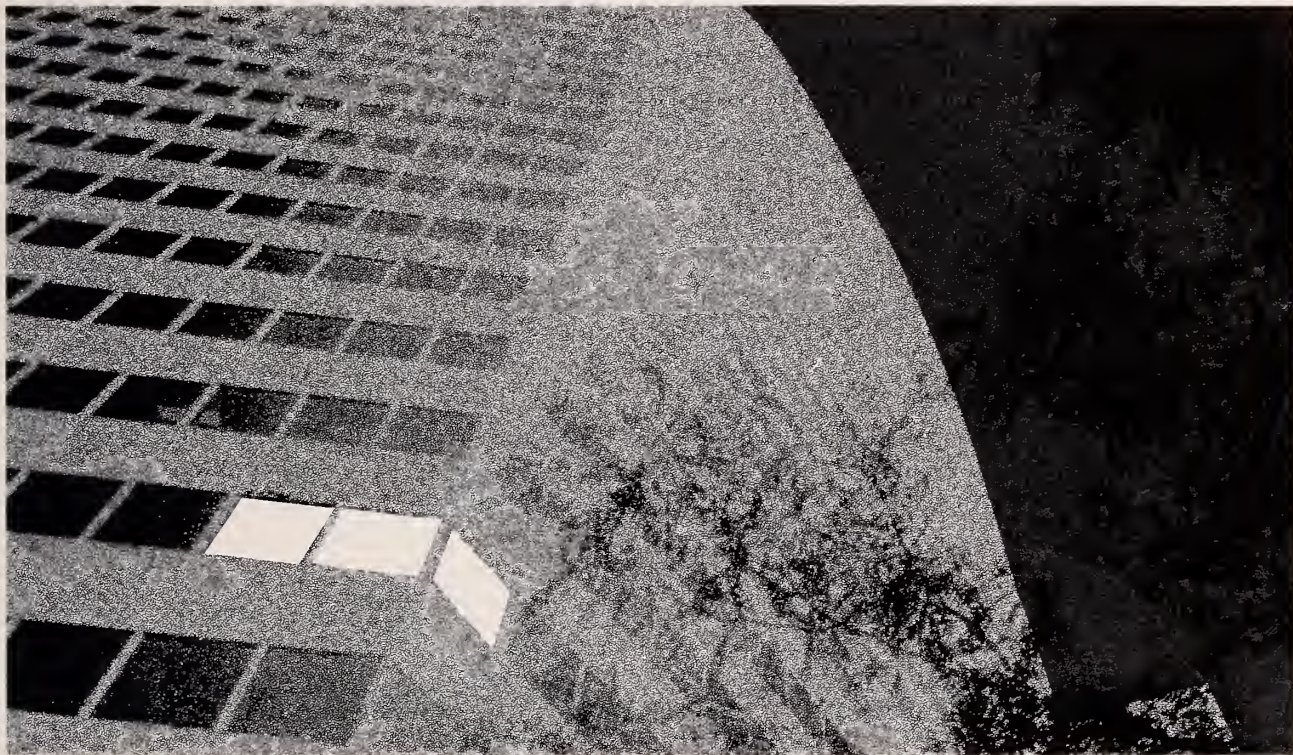
Physicians play an important role in helping their patients stop smoking.<sup>10</sup> The one-year abstinence rates measured using strict criteria do not appear very impressive, but the advice of a physician to stop may result in a patient making a serious attempt to stop smoking. Attempts to quit smoking, even if relapse occurs, are predictive of future long-term abstinence. Physicians must learn to define success in these terms. Persistent efforts to assist our smoking patients to quit will help them succeed in quitting sooner. Nicotine gum seems to be an additional means along with advice, self-help materials, and group programs to improve their chances of succeeding. — PAUL R. POMREHN, M.D., Assistant Professor, Preventive Medicine

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## STATE DEPT. OF PUBLIC HEALTH



### ADOLESCENT HEALTH PROGRAM

**T**HERE IS A rapidly growing concern and interest in the health care of young people between the ages of 10 and 21 years. This concern has been expressed by the Select Panel of Child Health in its report to the Congress in 1981. The Robert Wood Johnson Foundation has implemented a national program, "The High-Risk Young People's program." In addition, the American Academy of Pediatrics has made adolescent medicine a priority for the future.

The public, in general, has indicated a rising concern in adolescent behavior which presents as a demand for newer programs and legislation which focus on drug abuse, alcohol abuse, and adolescent sexual behavior. Two outstanding examples of this concern are: 1) the high school student program, "Students Against Drunken Driving," and 2) the proposed legislation to increase the legal age for alcohol consumption to 21 years.

Most individuals recognize adolescence as a healthy period of life, and it is certainly true that morbidity and mortality are lower during this period of life than in any other. It would be a serious error, however, to conclude that teenagers are immune to health problems.

Adele Hofmann, in the foreword to her new book, *Adolescent Medicine*, cites the following facts:

1. Accidents, homicides, suicides, malignant neoplasms and cardiovascular disease lead the list of causes of adolescent death.

2. Surveys of various adolescent populations have found an incidence of 40-60% of abnormal findings on physical examinations.

3. Inquiries from adolescents reveal that a

high priority is given to wanting help for problems concerning acne, "how far to go" with sex, depression, obesity, worries about health, dental care, nervousness, making friends, fatigue, and birth control.

4. Nearly 11 million adolescents are sexually active, and 1 million become pregnant, with 600,000 delivering a live birth each year. (In the past several years there has been a 40% reduction in live births to women less than 18 years of age in Iowa, and nearby states have reported a similar decrease as well as a decrease in abortions.)

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*"Accidents, homicides, suicides, malignant neoplasms and cardiovascular disease lead the list of causes of adolescent death."*

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5. The rate of gonorrhea among youth 15-19 years of age is second only to the rate among persons between 20-25 years of age.

In 1977, the Iowa State Department of Health developed an Advisory Council on Adolescent Pregnancy to focus concern and attention on adolescent problems. This Council recognized that adolescent pregnancy was a manifestation of many adolescent problems and refocused its attention to the broader problem of improving health for this age population. As a result of this Council's efforts, several priorities have been established for activities of the Department. They are as follows:

1. The funding of a pilot community adolescent counseling program in Dubuque. This program was developed by a committee of local medical providers and agencies that deal with adolescents. The objective is to provide a non-threatening focus to which adolescents can come and receive guidance and referral.

2. Developing a series of regional confer-

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This information on public matters is furnished and sponsored by the Iowa State Department of Health.



ences on adolescents. These conferences provide a forum for discussion about the adolescent in everyday life. Our target audience is school personnel, public health nurses, clergy, physicians, parents, and other disciplines who work with youth.

The conference format includes a keynote presentation on, "Who Is the Adolescent of the '80's," by Donald E. Greydanus, M.D., adolescent medicine specialist, Raymond Blank Memorial Hospital in Des Moines. A reactor panel consisting of a moderator and 3 local experts will respond to the keynote. The afternoon will consist of concurrent workshops on the following topics:

1. *Effective Communication with Teenagers*
2. *Legal Rights of Minors*
3. *Chronic Adolescent Health Problems (allergies, diabetes, etc.)*
4. *Adolescent Sexuality — Issues and Answers*
5. *Normal Growth and Development*
6. *Depression and Suicide*
7. *Stress — Its Impact on Teenagers*
8. *Teenage Drug Use*
9. *Eating Disorders in Adolescents*

The first conference was May 14, 1984 at North Iowa Area Community College in Mason City. The participants' evaluation will be used as input to make any future conference changes. The remaining conferences will be in late October in Sioux City, Cedar Rapids, and Des Moines.

## OUR MAN IN EDUCATION

(Continued from page 257)

And yet, somehow, these events may really stick somewhere because bits and pieces appear at surprising times, such as during dreams. Such reappearances of lost information attracted Freud's interest and led to the use of dream analysis as part of his psychoanalytic therapy. I'd like to say more about Freud, but I will stop with the recommendation, should you find yourself in Vienna as I was while rereading 1984, that you visit the fascinating Freud Museum at Berggasse 19, where he worked and lived with his family until driven out by Hitler in 1938. Both Freud and Orwell were thus profoundly affected by totalitarianism. And we, too, yet need to remain on guard.

## April 1984 Morbidity Report

Disease	Apr. 1984 Total	1984 ta Date	1983 ta Date	Most Apr. Cases Reported From These Counties
Amebiasis	3	14	17	Dallas, Jahnsan
Brucellosis	0	1	0	
Chickenpox	1477	4494	4032	Scattered
Campylobacter	3	46	55	Dubuque, Linn, Palk
Cytomegalovirus	0	6	6	
Eaton's Agent infection	5	14	95	Jahnsan, Palk, Paweshiek
Encephalitis, viral	1	4	16	Palk
Erythema infectiosum	0	0	25	
Gastroenteritis (GIV)	1324	7368	7109	Scattered
Giardiasis	14	60	61	Scattered
Hepatitis, A	3	10	14	Dubuque, Hamilton
Hepatitis, B	6	38	27	Scattered
Hepatitis, Non A-B	2	9	17	Clayton, Muscatine
Hepatitis type unspecified	1	5	4	Jahnsan
Herpes Simplex	57	284	413	Scattered
Herpes Zoster	2	2	6	Cherokee, Jahnsan
Histoplasmosis	8	11	10	Scattered
Infectious mononucleosis	10	76	92	Scattered
Influenza, lab confirmed	28	134	179	Scattered
Influenza-like illness (URI)	3806	27093	24047	Scattered
Legionellosis	0	0	1	
Malaria	0	1	2	
Meningitis aseptic	3	12	21	Dubuque, Lee, Scott
bacterial	6	40	57	Scattered
meningococcal	1	14	9	Palk
Mumps	1	14	31	Webster
Pertussis	0	3	4	
Rabies in animals	13	50	78	Scattered
Reye Syndrome	0	1	0	
Rheumatic Fever	0	0	0	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmonellosis	15	74	54	Scattered
Shigellosis	3	18	11	Palk, Wadbury
Tetanus	1	1	0	Dallas
Toxic Shock Syndrome	5	9	6	Audubon, Emmet, Jahnsan, Palk
Tuberculosis fatal ill	9	29	32	Scattered
bact. pos.	8	23	26	Scattered
Typhoid Fever	0	0	0	
Venereal diseases:				
Gonorrhea	361	1451	1491	Scattered
Syphilis	0	10	4	

Other Non-Reportable Diseases: Ascariasis — 1, Webster; Chlamydia, 1, Jahnsan; Yersinia, 1, Des Moines.

# An added complication... in the treatment of bacterial bronchitis\*

Increasing incidence  
of ampicillin resistance in  
*Haemophilus influenzae*

Ampicillin Resistant  
*Haemophilus influenzae*

*H. influenzae*

*S. pneumoniae*

**Brief Summary:** Consult the package literature for prescribing information.

**Indications and Usage:** Cefaclor\* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefaclor.

**Contraindication:** Cefaclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS. AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefaclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions:** General Precautions—If an allergic reaction to Cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefaclor may result in the overgrowth of non-susceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' test have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when anti-globulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefaclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefaclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy:**—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in terrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefaclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers:**—Small amounts of Cefaclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefaclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefaclor.<sup>7</sup>

# Cefaclor®

## cefaclor

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Cefaclor\* (cefaclor, Lilly) is administered to a nursing woman.

**Usage in Children:**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions:** Adverse effects considered related to therapy with Cefaclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2-5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

**Hypersensitivity reactions** have been reported in about 1-5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis, arthralgia, and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefaclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain:**—Transient abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic:**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic:**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal:**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.<sup>8</sup>

Note: Cefaclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630.

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News About Colleagues

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## ABOUT IOWA PHYSICIANS



**Dr. Clive R. Ayers**, longtime Atlantic physician, recently retired. Dr. Ayers is a past president of the Iowa Society of Osteopathic Physicians and Surgeons; past president of the American Osteopathic Academy of Sclerotherapy; former chief of staff, vice chief and secretary of the medical staff at Cass County Memorial Hospital. Dr. and Mrs. Ayers plan to continue living in Atlantic. . . . **Dr. Clair V. Lindholm**, Armstrong physician nearly 32 years, recently was named "Businessman of the Year," by the local ABC Club. Dr. Lindholm was cited for his involvement in the ABC Club, Kiwanis Club, School Board, church activities and his 25 years in the profession. He is also a

recipient of the Iowa High School Athletic Association's Team Doctor Award. . . . **Dr. Roger A. Ott**, Dubuque, recently was elected president of the Iowa Chapter, American College of Surgeons. . . . Governor Terry Branstad recently appointed **Dr. Ronald L. Zoutendam**, Sheldon, to the Physician's Assistants Advisory Committee Board of Medical Examiners. . . . **Dr. Charles D. Bendixen**, Marshalltown, has accepted a position in industrial and occupational medicine with the John Deere Company in Waterloo. Dr. Bendixen has practiced in Marshalltown since 1970. . . . **Dr. Thomas E. Kane** recently was elected president of the Boone County Medical Society and

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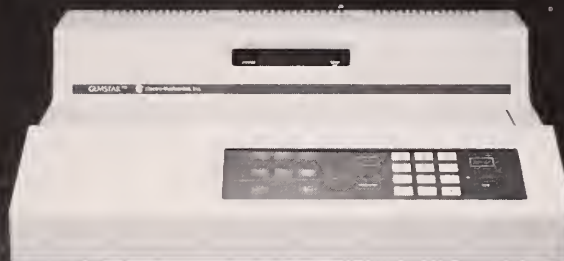
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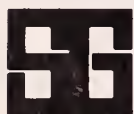
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Dr. John R. Anderson was named secretary. Both are Boone physicians.

Dr. William Catalona, Muscatine, was guest speaker at a recent meeting of the Muscatine Kiwanis Club. Dr. Catalona spoke on his trip to China last year. He talked about some of the changes which had taken place since World War II when he spent 3 years in China with a U. S. Army Field Hospital Unit. . . . Dr. Robert L. Mandsager, Marshalltown, recently was named president of the Iowa Foundation for Medical Care. Other officers are Dr. Charles Jons, Ames, first vice president; Dr. Charles Porter, Davenport, second vice president; Dr. Maurice Kraushaar, Fort Dodge, secretary; and Dr. Kurt Hahn, Burlington, treasurer. Executive committee members chosen were Dr. Richard Satterfield, Sioux City, at-large director; Dr. Milton Dakovich, Des Moines, chairman of the comprehensive review committee; and Dr. Robert Sedlacek, Cedar Rapids, chairman of the long-term care committee. . . . Dr. Thomas L. Bennett, Des Moines, recently was appointed medical director of the Departments of Pathology and Laboratory Medicine at Charter Community Hospital. Dr. Bennett serves additionally as state medical examiner and is a diplomate of the American Board of Pathology in Anatomic and Clinical Pathology and Forensic Pathology. . . . Dr. Asha Madia recently joined Drs. Donald Flory and Stephen Smith in Indianola. Prior to joining Drs. Flory and Smith, Dr. Madia practiced pediatrics in Indianola.

## DEATHS

Dr. Cecil W. Seibert, 77, longtime Waterloo physician, died April 18 at St. Francis Hospital in Waterloo. Dr. Seibert received the M.D. degree and served his obstetrics and gynecology residency at the U. of I. College of Medicine. He began medical practice in Waterloo in 1937. From 1942 to 1946 he served in the Army Air Corps and was discharged as a lieutenant colonel. Dr. Seibert was the first board certified OB-GYN physician to practice in Waterloo and in Iowa. At the time of his death, he was an instructor at the Black Hawk Area Family Prac-



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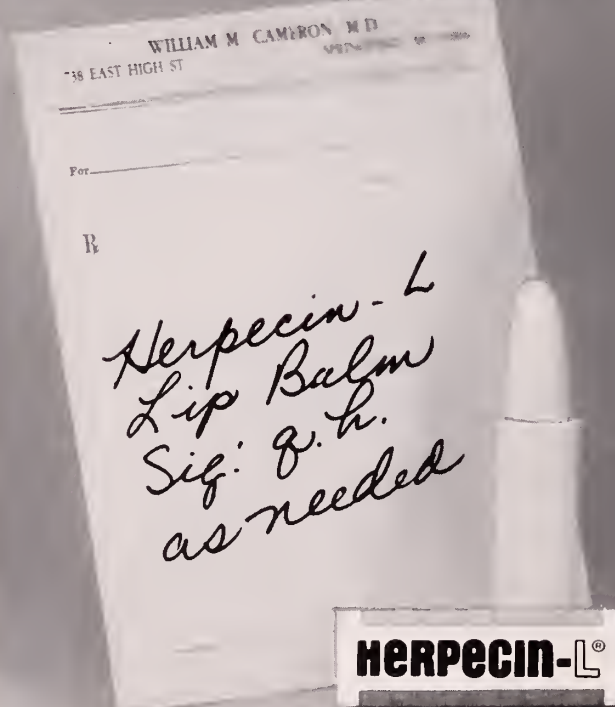
tice Center. He was a past president of the medical staff at Allen Memorial and St. Francis Hospitals; past president of the Black Hawk County Medical Society and Iowa Medical Society; past president of the Iowa Division of the American Cancer Society and a recipient of the Society's highest honor, the Bronze Medal; a diplomate of the American Board of Obstetrics and Gynecology; and a fellow of the International College of Surgeons. Dr. Seibert was a life member of the Iowa Medical Society.

**Dr. Charles N. Hyatt**, 76, Forsyth, Missouri, died April 17 at Iowa Methodist Medical Center in Des Moines. Dr. Hyatt received the M.D. degree at the U. of I. College of Medicine and interned at Iowa Methodist Hospital in Des Moines. He began medical practice in Humeston; later relocated in Corydon and following retirement moved to Forsyth, Missouri. Dr. Hyatt was a World War II veteran; life member of the Iowa Medical Society; and member American Academy of Family Physicians. He served for many years on the Board of Directors of Blue Shield.

**Dr. Arthur P. Echternacht**, 76, Fort Dodge, died April 24 in Dubuque. Dr. Echternacht received the M.D. degree at Washington University School of Medicine and served a radiology residency at Indiana University. Prior to locating in Fort Dodge in 1949, he was director of the Department of Radiology at Indiana University. He retired in 1978 to Bella Vista, Arkansas, and returned to Dubuque in 1983. Dr. Echternacht was a past president of the Iowa Radiological Society; fellow of the American College of Radiology and member of the Roentgen Ray Society, the Radiological Society of North America. Dr. Echternacht was a recipient of the Silver Beaver, the highest award for volunteers in Boy Scouting and a Paul Harris Fellow in the International Rotary, the Rotary's highest award.

**Dr. E. H. Carlson**, 80, Muscatine, died April 25 at Muscatine General Hospital. Dr. Carlson received the M.D. degree at Loma Linda University School of Medicine in Loma Linda-Los Angeles, California. He began his medical practice in Muscatine in 1939, retiring in 1971.

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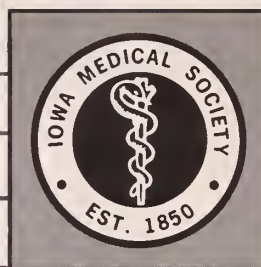
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A Monthly Commentary

## IN THE PUBLIC INTEREST



### Heavy On The Data

**W**ITH ITS FIRST anniversary at hand (in July), the Iowa Health Data Commission (IHDC) is proceeding toward an objective set by the Iowa General Assembly. A 1983 law establishing the Commission says it is to collect and distribute data to "improve the decision-making processes regarding the purchase, price and use of appropriate health care services."

We are told by John Naisbitt (and others) these are the information times. So logic follows, perhaps, the more data you compile the more humanity will benefit. Be sure, however, when the data has an almost singular goal of ultra, super-efficiency, it does not impact negatively on the quality component of the service. Such an admonition becomes particularly meaningful when you or a family member are on the receiving end of the service — and the service is of a health care nature.

In a statement issued in May by the IHDC, an opening comment reads: "Rapidly rising health care costs and the attendant increases in health insurance premiums have led to a call for action in (the) management of Iowa's health care costs. Purchasers, providers and the general public agree that changes must be made in the ways that health care is delivered and financed. A key ingredient is the supply of health data and cost information."

This thought is consistent with the theme of our economic times. A variation on the tune comes, as suggested before, when the purchaser, provider or general citizen becomes the patient and wants/deserves the best possible care. Or when, in the drive for rock-bone efficiency, the individual citizen sees his community hospital moving toward extinction.

Obviously, the need for data is basic to our times. And, properly directed, the Iowa Health Data Commission is an appropriate mechanism by which relevant health price and use data can be gathered, compiled and distrib-

uted. The IHDC is comprised of the Iowa Commissioners of Health, Insurance and Human Services, two Iowa legislators and the chairman of the Health Policy Corporation of Iowa.

The Commission has arranged for HPCI to furnish the data clearinghouse needed. The clearinghouse is to receive utilization and cost data from the third-party payors. It becomes the property of the Commission. The information going into the clearinghouse is said to be under collection in the health care field already. The challenge is one of setting into motion a system which enables the information to travel from hospital or third-party to the clearinghouse.

The importance of patient confidentiality has been stressed in the creation and early going of the IHDC (and the clearinghouse). Data and information on individual patient records and claims are confidential and will remain so.

What data will be available?

The May report says: "The IHDC will make available hospital and physician pricing information to the public. For example, local-level organizations may obtain price data for their respective communities. The data may be used by purchasers to identify cost-effective physicians and hospitals. Providers may use the data to refine practice patterns."

It adds that "reports such as these can be helpful to individual hospitals and their medical staffs in identifying those types of cases where opportunities exist for shorter lengths of stay and better use of ancillary services."

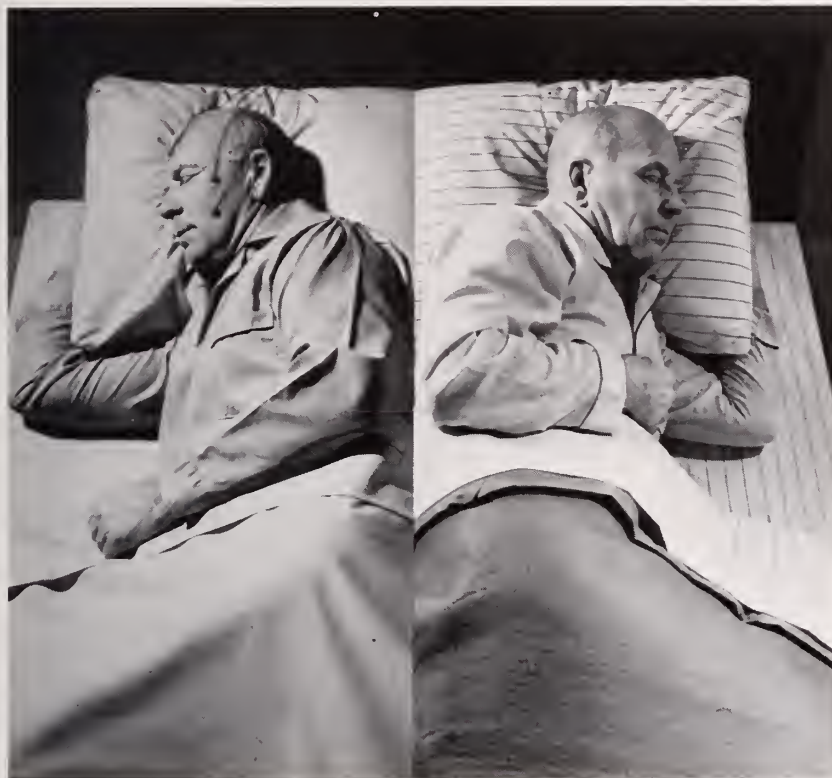
If Megatrends is right and the really innovative stuff comes from the bottom (or local level) up, is it not important to use this emerging data to foster grassroots ingenuity — instead of placing full dependence on a cookbook?

June 1984

Iowa Medicine



# COMPLETE LABORATORY DOCUMENTATION<sup>1-5</sup> ... EXTENSIVE CLINICAL PROOF



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**References:** 1. Kales J et al: *Clin Pharmacol Ther* 12:691-697, Jul-Aug 1971. 2. Kales A et al: *Clin Pharmacol Ther* 18:356-363, Sep 1975. 3. Kales A et al: *Clin Pharmacol Ther* 19:576-583, May 1976. 4. Kales A et al: *Clin Pharmacol Ther* 32:781-788, Dec 1982. 5. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 6. Kales A, Kales JD: *J Clin Pharmacol* 3:140-150, Apr 1983. 7. Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther* 21:355-361, Mar 1977. 8. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 9. Amrein R et al: *Drugs Exp Clin Res* 9(1):85-99, 1983. 10. Monti JM: *Methods Find Exp Clin Pharmacol* 3:303-326, May 1981. 11. Greenblatt DJ et al: *Sleep* 5(Suppl 1):S18-S27, 1982. 12. Kales A et al: *Pharmacology* 26:121-137, 1983.

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**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

**Precautions:** In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** 30 mg usual dosage; 15 mg may suffice in some patients. **Elderly or debilitated patients:** 15 mg recommended initially until response is determined.

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# IowaMedicine

July 1994

Journal of the Iowa Medical Society



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# Iowa Medicine

July 1984

Volume 74 Number 7

Journal of the Iowa Medical Society

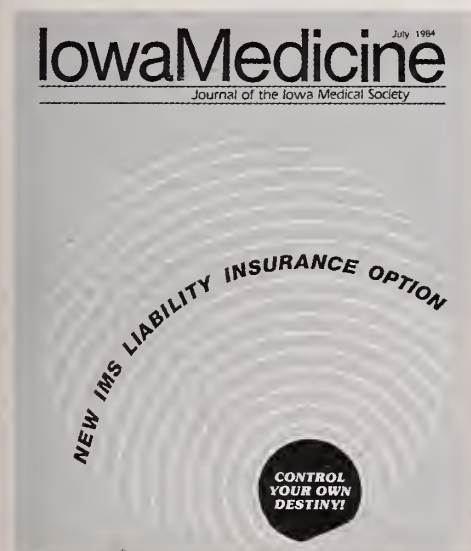
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## ABOUT THE COVER



This month's cover of IOWA MEDICINE focuses attention on the historic action taken May 6 by the 1984 Iowa Medical Society House of Delegates in approving development of a new medical liability insurance option for Iowa physicians. Hope is the coverage will be available this fall. For a summary of this new program, as it is now emerging, please turn to page 283.

IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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## PRESIDENT'S PRIVILEGE



### CREDIBILITY

**T**HE IOWA LEGISLATURE has just adjourned. They will not reconvene until January. So why this article on legislative action now?

Because NOW is the time to get to know your legislators — your representative and your senator.

These people carry a heavy responsibility and must respond to many pressures — we can let them know that we appreciate their willingness to do this tough task on our behalf.

They receive information and requests from many groups — we can discuss with them the questions they have about health care. It will be an educational process for them and us. Perhaps we can answer questions or volunteer to get information for them.

It is as we get to know each other better that we establish CREDIBILITY between us — a feeling of confidence in and respect for each other.

Our small county group of nine invited our senator and representative to the home of one of our members. A local store catered a simple

meal and we visited. We doctors asked how we could be of help to them.

This fall there will be legislative conferences which you can attend. We are trying to enroll more physicians as LEGISLATIVE CONTACT PHYSICIANS to work with their legislators on a continuing basis.

Legislators face problems of costs, care for the elderly, care for the poor among others.

The IMS, through its Legislative Committee, will study the issues so the IMS can have an effective voice in the legislature; but legislators need to hear from *their* doctors *before* the session begins.

NOW is the time to establish YOUR CREDIBILITY!

*John Tyrrell, M.D.*

John E. Tyrrell, M.D.  
President

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Camden, New Jersey
- **Mohamed Y. Dawood, M.D.**  
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University of Texas  
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Emory University  
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- **Kenneth L. Noller, M.D.**  
Mayo Clinic  
Rochester, Minnesota
- **Roy M. Pitkin, M.D.**  
University of Iowa  
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Philadelphia College of Osteo. Med.  
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Donald Lulu, M.D., Mercy Hospital Medical Center  
Arnold Nielsen, M.D., Iowa Lutheran Hospital  
John Olds, M.D., Iowa Methodist Medical Center  
Ronald Shirk, D.O., Charter Community Hospital



# New Malpractice Coverage For Your Consideration

---

*A new malpractice insurance option was approved in May by the IMS House of Delegates. Activity necessary to launching the program is now in process. This question/answer discussion will furnish member physicians with important preliminary information. This important alternative is one all IMS member physicians will want to consider.*

---

**H**ISTORIC ACTION! On May 6, 1984, the Iowa Medical Society House of Delegates okayed development of a new medical liability insurance program for member physicians.

As proposed to physician delegates serving in the 1984 IMS House, the program calls for the Society and the American Medical Assurance Company (AMACO), an insurance facility wholly owned by the AMA, to become partners. The lead resolution approved by the House said specifically this IMS/AMACO venture should be twofold in objective:

1. To create an IMS Deductible Trust Fund that allows for accumulation of the needed capital (\$3 million) over an approximate three-year period to form an IMS-owned and controlled liability insurance company.

2. To supply the short-range liability insurance needs of Iowa physicians.

Added emphasis was placed by the 1984 House of Delegates on the importance of the Trust being under the full direction of the IMS.

The idea of full direction was similarly underscored for the Iowa Physicians Liability Insurance Company, which is expected to succeed the Trust Fund when the capitalization requirements are met.

This impending entry by the Society into the insurance field has been noted in several IMS communications. It is reiterated in this issue of IOWA MEDICINE with a view toward answering various of the questions which have been received. In this vein, the 1984 House said there should be "full and maximum opportunity for the explanation of this new and important program to member physicians all across the state."

Here then is pertinent information in a question/answer format:

**Are the goals for this new liability insurance program fully identified?**

Yes. The program criteria set by the IMS Medico-Legal Committee are (1) financial stability, (2) ultimate cost savings, (3) long-term market stability, (4) control by the Iowa Medical Society, and (5) equitable rate treatment of insured physicians.

**Is there a timetable for start-up of the new program?**

Because certain actions must be taken by various parties, no beginning date can be pinpointed exactly. Hope exists that the new program will be available by early September. This will depend on our meeting several requirements, including obtaining necessary approval by the Iowa Insurance Department.

*(Please turn to page 284)*

**If my existing liability insurance policy is subject to renew soon and I am interested in the IMS program, what suggestions do you have?**

You may want to contact Society headquarters. It is possible some acceptable coverage alternative can be found to cover the short interval before the IMS program becomes available. It is important here for the physician with claims-made coverage to report any possible malpractice incidents to his existing carrier if a conversion is made to a different insuring company.

**Speaking of forms of coverage, what is planned for the IMS/AMACO program?**

Coverage is expected to continue as it is under the current IMS/Aetna program with both occurrence and claims-made forms available. An economically acceptable conversion from claims-made coverage to claims-made coverage under the IMS program will be provided.

**How will member physicians be informed about the new IMS/AMACO program?**

There will be a statewide information program. It will be designed to reach every member physician. Presentations will be made at county medical society meetings and before other medical groups. Descriptive printed material will be distributed. The marketing program will be carried out as effectively and economically as possible.

**What about the underwriting process?**

Applicants for coverage will need to be IMS member physicians and all members may apply. Underwriting policies will exist, meaning that individuals presenting a claims history will require evaluation. An insurability hearing process is planned before any final denial of coverage occurs.

**Are the premiums going to be competitive?**

Obviously, they must be if participation is to

be achieved. Just as important as short-term competitive rates is acceptance of the premise that long-term premium stability can occur with intelligent program administration and claims handling, that can best be provided by your own company.

**How will loss prevention and claims adjudication be handled?**

Very conscientiously. And out of a team concept with all insureds as members of the team. We hope to retain and refine those procedures now operative under the IMS/Aetna program.

**Describe briefly how the partnership with the IMS and AMACO will work?**

The Trust will be established for all participating physicians for the mutual pooling of the first \$25,000 of each claim. Approximately one-third of the current total premiums will be deposited in the Iowa trust account to cover this liability. It will serve as an operating account to pay claims covered under the deductible and all investment income and direct profit will be retained in this trust account.

AMACO will issue policies to Iowa physicians in excess of the \$25,000 Trust-funded deductible. The combination of the Trust fund and the AMACO policy will provide continuity of coverage equal to that currently available.

Administratively, including premium calculation and payment, this will be a single function. It is anticipated the Trust will develop the \$3 million sum needed to capitalize an instate doctor-owned company in approximately three years. Again, AMACO has volunteered to enter into a relationship with the IMS on a limited-time committed basis for the sole purpose of helping Iowa physicians establish their own insurance company.

The Iowa Medical Society is embarking on a bold and challenging program. Its success will depend on a high level of interest and participation by IMS member physicians. It appears to be the best way to put into motion the popular phrase: *control your own destiny*.



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# Summary of 1984 Actions By IMS House of Delegates

**T**HE 1984 ANNUAL MEETING of the Iowa Medical Society House of Delegates was May 5-6 in Des Moines. Sessions of the House were chaired each day by L. Dean Caraway, M.D., and William C. Rosenfeld, M.D., speaker and vice speaker, respectively. Open hearings were conducted by 3 reference committees on May 5. The Delegates' banquet occurred May 5 and was chaired by President Erling Larson, M.D.

The 1984 Iowa Medical Society Merit Award recipient was John W. Eckstein, M.D., Dean of the University of Iowa College of Medicine, Iowa City. A Distinguished Service Award was presented to John H. Sunderbruch, M.D., Davenport. Dr. Sunderbruch is only the third Iowa physician to receive this highest IMS award. The Iowa Hospital Association received the Washington Freeman Peck Award.

## MAY 5 SESSION

Registered for the May 5 session of the House were 154 delegates and 10 ex officio members. Minutes of the May 1, 1983 session of the House of Delegates were approved as summarized in the July, 1983, issue of the JOURNAL OF THE IOWA MEDICAL SOCIETY. Reports contained in the 1984 HANDBOOK FOR THE HOUSE OF DELEGATES were approved as published with the exception of the Committee on the Deliv-

ery of Health Services on page 18 of the HANDBOOK. It was referred to the Reference Committee on Legislation and Miscellaneous Business.

## SUPPLEMENTAL REPORTS

The following reports were made to the 1984 House of Delegates:

**Board of Trustees**, chaired by Emmett B. Mathiasen, M.D., chairman. Following this report, the delegates viewed a slide presentation on the membership status and financial condition of the Iowa Medical Society.

**Necrology**, by Daniel M. Youngblade, M.D., chairman, Judicial Council.

**Nominating Committee**, by Lawrence O. Goodman, M.D., chairman. A recommendation in the Nominating Committee report asked that the telephone conference format be continued on a permanent basis with assurances that if any objection is raised to holding the meeting in this manner, it will be rescheduled as a physically-present session at IMS headquarters. (Language authorizing this approach was transmitted to the Standing Committee on Articles of Incorporation and Bylaws for consideration by the 1984 House of Delegates). The Committee also recommended that at the meeting of the IMS Executive Council which occurs just prior to the annual sched-





**THIRD WINNER EVER** — The Distinguished Service Award was given to an Iowa physician for only the third time in Iowa Medical Society history. John H. Sunderbruch, M.D., Davenport, is shown accepting the coveted recognition. Dr. Sunderbruch has been a state medical leader for more than two decades and was IMS president in 1971.

rule of district caucuses, the incumbent officers eligible for re-election be requested and required to signify their intention to run again.

**Committee on Articles of Incorporation and Bylaws**, by Kenneth J. Judiesch, M.D., chairman.

**Legislative Committee**, by Clarence H. Denner, Jr., M.D., chairman.

**Iowa Medical Political Action Committee (IMPAC)** by Jackson D. Ver Steeg, M.D., chairman. Joseph Hatch, M.D., Salt Lake City, Utah, member of the AMPAC Board of Directors, addressed the House briefly.

**Medico-Legal Committee**, by Warren V. Wulfekuler, M.D., chairman. Following this report, Dennis W. Olsen, vice president, Victor O. Schinnerer Company, Inc., and Robert L. Dion, vice president/general manager, American Medical Assurance Company (AMACO), presented background information on the proposed Iowa Medical Society professional liability insurance company.

**Iowa Medical Foundation**, by Emmett B. Mathiasen, M.D., president, Foundation Board of Directors.

*(Please turn to page 288)*



**OTHER 1984 RECOGNITION** — John W. Eckstein, M.D., dean, University of Iowa College of Medicine, was presented this year's Merit Award by the IMS. Dr. Eckstein, on the left in the left photo, accepts the award from Emmett B. Mathiasen, M.D., Council Bluffs, the IMS Board chairman. In the right photo, Hormoz Rassekh, M.D., left, Council Bluffs, as immediate past-president, is cited for his Society service. He is congratulated by IMS President Erling Larson, M.D., Davenport.





**PECK AWARD TO IHA** — The 1984 recipient of the IMS Washington Freeman Peck Award is the Iowa Hospital Association. Shown accepting the award from IMS President Erling Larson, M.D., are Ed Lynn, center, immediate past chairman, IHA Board of Directors, and Don Dunn, IHA president.

**Blue Shield**, by Enfred E. Linder, M.D., chairman, Blue Shield Board of Directors.

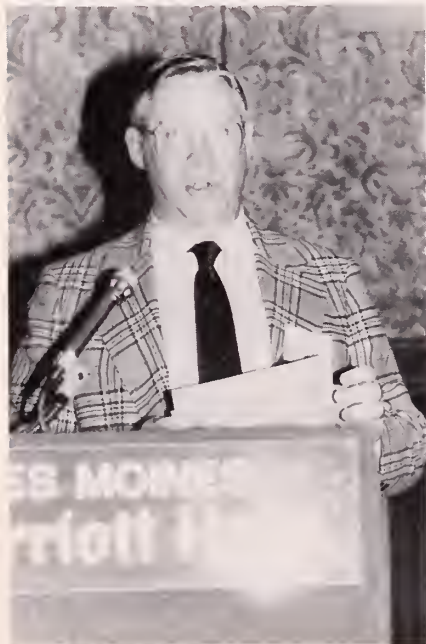
**Iowa Foundation for Medical Care**, by Robert L. Mandsager, M.D., IFMC president.

A check for \$11,904.14 was presented by Emmett B. Mathiasen, M.D., chairman, IMS Board of Trustees, to the University of Iowa College of Medicine. The grant represents contributions to the AMA/ERF which have been designated for the U. of I. John W. Eckstein, M.D., Dean, U. of I. College of Medicine, accepted the check. On behalf of the Board of Trustees, an additional check for \$2,610 was

presented to Dr. Eckstein for the student medical assistance program at the U. of I.

Gary Keim, Sandoz pharmaceutical representative, presented a special award to Marion E. Alberts, M.D., scientific editor of *IOWA MEDICINE*, in recognition of the magazine's excellence as a medical publication. Sandoz Pharmaceuticals annually sponsors a Medical Journalism Competition, and this is the fourth award presented to the Iowa Medical Society.

Supplemental reports for the Ad Hoc Committee to Recommend Redistricting Plan; Committee on Emergency Medical Services; Committee on Alternate Delivery Systems; Com-



**THREE HOUSE SPEAKERS** — Shown above are three Iowa physicians who made presentations to the 1984 IMS House of Delegates. Left is Daniel M. Youngblade, M.D., Sioux City, then chairman, IMS Judicial Council; center, Robert L. Mondsager, M.D., Marshalltown, president, Iowa Foundation for Medical Care; and Warren V. Wulfekuhler, M.D., Mason City, chairman, IMS Medico-Legal Committee.



mittee on Medical Services; Committee on Delivery of Health Services; and the Executive Council were contained in the delegates' packets. They were not read.

In his comments to the House, Society President Erling Larson called on Iowa physicians to continue to be the dominant voice for quality medical care. This message Dr. Larson told the delegates is one Iowa physicians must deliver loud and clear to all of those parties active in the health care marketplace. "To do less," said Dr. Larson, "would be to shirk our ethical responsibilities." Dr. Larson's remarks were published in the June, 1984, issue of IOWA MEDICINE.

Delaware: Holger M. Andersen, M.D., Naples, Florida  
 Hancock-Winnebago: Lancelot W. Eller, M.D., Konowho  
 Jefferson: John W. Costell, M.D., Berryville, Arkansas  
 Johnson: Plocidus J. Leinfelder, M.D., Iowa City  
 Lee: Arthur C. Richmond, M.D., Fort Madison  
 Linn: James A. Smrha, M.D., Cedar Rapids  
 Lucas: Robert E. Anderson, M.D., Choriton  
 Muscotine: Samuel Blum, M.D., Muscotine  
 Polk: Rolph A. Dorner, M.D., Des Moines  
 Scott: Walter J. Bolzer, M.D., Davenport, and John H. Sunderbruch, M.D., Davenport  
 Sioux: Edward B. Grossmann, Sr., M.D., Orange City  
 Wapello: David O. Holmon, M.D., Choriton, and Justus B. Roberts, M.D., Ottumwa  
 Woodbury: Loren E. Collins, M.D., Sioux City  
 Wright: Byron L. Bosinger, M.D., Goldfield, and Samuel P. Leinboch, M.D., Belmond



NEW LIFE MEMBERS — Of the 27 new IMS Life Members in 1984, six were able to attend the May 5 Delegates Banquet. Pictured, seated are Walter J. Balzer, M.D., Davenport; John H. Sunderbruch, M.D., Davenport, and Ralph W. Edwards, M.D., Centerville. Standing from left are: Edward B. Grassmann, Sr., M.D., Orange City; John W. Costell, M.D., Berryville, Arkansas; and Lancelot W. Eller, M.D., Kanawha.

Twenty-four resolutions were formally introduced and referred to reference committees. Action taken on these resolutions is reported subsequently in this summary.

#### LIFE MEMBERS

The following physicians were elected to Life Membership in the Iowa Medical Society:

Apponoose: Rolph R. Edwards, M.D., Centerville and Gronville L. Richey, M.D., Ruidoso, New Mexico  
 Benton: Deon A. Dutton, M.D., Von Horne  
 Block Hawk: Donald W. Bickley, M.D., Waterloo and Marshall D. Huston, M.D., Cedar Falls  
 Boone: Donald L. Cross, M.D., Boone  
 Butler: Bruce V. Andersen, M.D., Greene  
 Coss: Millard T. Petersen, M.D., Atlantic  
 Chickosow: Arlo L. Murphey, M.D., Tucson, Arizona  
 Clinton: Joseph E. O'Donnell, M.D., Clinton

The following physicians were elected to Associate Membership in the Iowa Medical Society:

Apponoose: Eugene F. Ritter, M.D., Centerville  
 Block Hawk: Dwight E. Conklin, M.D., Sonibel, Florida  
 Corroll: Poul D. Anneberg, M.D., Corroll, and James M. Tierney, M.D., Corroll  
 Colhoun: David C. Corver, M.D., Rockwell City  
 Cerro Gordo: Von W. Hunt, M.D., Mason City, Lawrence C. Orton, M.D., Mason City, George I. Tice, M.D., Mason City, and George H. West, Jr., M.D., Mason City  
 Cloyton: Eugene M. Downey, M.D., Guttenberg, and Adrian R. Powell, M.D., Elkader  
 Clinton: Harry F. Kooch, Jr., M.D., Clinton  
 Davis: John R. Scheibe, M.D., Bloomfield  
 Des Moines-Louis: Wolter C. Fridoy, M.D., Burlington, and Donald D. Petersen, M.D., Boca Raton, Florida  
 Dickinson: Russell L. Cox, M.D., Spirit Lake, and Carol L. Plott, M.D., New Braunfels, Texas

(Please turn to page 290)



**PRESIDENTS AND THEIR LADIES** — Shown above are IMS President and Mrs. Erling Larson, left, with President-elect and Mrs. John E. Tyrrell, Manchester. Dr. Tyrrell succeeded Dr. Larson as Society president on May 6.

Dubuque: Jahn P. Groves, M.D., Dubuque, and Joseph J. Stroub, M.D., Dubuque

Foyette: C. Scott Linge, M.D., Cedar Rapids

Josper: John W. Ferguson, M.D., Newton

Johnson: James G. Boumann, M.D., Iowa City, and Arthur C. Wise, M.D., Iowa City

Lee: Harold L. Schrier, M.D., Fort Madison

Lyan: Jahn G. Lovender, M.D., George

Mahaska: Ellis Duncon, M.D., Fremant

Marshall: Charles R. Sakal, M.D., State Center, and Daniel J. Sullivan, M.D., Marshalltown

Mitchell: William L. Owen, M.D., St. Ansgor

Manrae: Harold J. Richter, M.D., Albia

Palk: Charles L. Burr, M.D., Des Moines, Daniel A. Glomset, M.D., Des Moines, Felix T. Hoch, M.D., Des Moines, James W. Hepplewhite, M.D., Des Moines, Mory M. Hastetter, M.D., Des Moines, Porker K. Hughes, M.D., Des Moines, Milton S. Mork, M.D., Des Moines, Cornelius J. McGorvey, M.D., Des Moines, Jase M. Ramera, M.D., Des Moines, and Jahn G. Thamsen, M.D., Des Moines

Scott: Edward E. Anderson, M.D., Sun City West, Arizona, and Glenn D. Cunningham, M.D., Davenport

Story: Fartunoto J. Neglia, M.D., Maxwell

Union-Taylor: Rager W. Boulden, M.D., Lenax

Wopello: Kenneth R. Kingsbury, M.D., Ottumwa, Robert P. Meyers, M.D., Ottumwa, and Herbert L. Warmhoudt, M.D., Ottumwa

Webster: Paul L. Stitt, M.D., Fort Dodge



**FOUNDATION LOAN RECIPIENTS** — The Scanlon Student Loan Fund of the Iowa Medical Foundation exceeded \$1 million in loans in the 1983-84 academic year. Gregg Polzin, Ankeny, left, U. of I. medical school senior, is shown with earlier loan recipients Harold W. Miller, M.D., Davenport, and James E. McCabe, M.D., Storm Lake.



Wadbury: Albert D. Blunderman, M.D., Spirit Lake, and Charles M. Morriott, M.D., Sioux City

The speaker presented information on the reference committee hearings, the balloting procedures and the concluding session of the House.

#### MAY 6 SESSION

Registered for the May 6 session of the House were 138 delegates and 8 ex officio members. The minutes of the May 5 session of the House were read and approved.

Mrs. John R. Anderson, immediate past president, Iowa Medical Society Auxiliary, commented on her year in office.

The following physicians were announced as having been elected or reelected to the positions noted:

President-elect:	Emmett B. Mathiosen, M.D., Council Bluffs
Vice President:	Don C. Green, M.D., Des Moines
Speaker of the House:	Lynn D. Caraway, M.D., Amana
Vice Speaker:	William C. Rosenfeld, M.D., Mason City
Trustee:	
(3-year term)	Daniel M. Youngblode, M.D., Sioux City
Trustee:	
(1-year term)	Enfred E. Linder, M.D., Ogden
AMA Delegate:	
(2-year term)	Clorence H. Denser, Jr., M.D., Des Moines, and John M. Rhodes, Sr., M.D., Pocahontas
AMA Alternote Delegate:	
(2-year term)	Lawrence O. Goodmon, M.D., Marshalltown, and Clarkson L. Kelly, Jr., M.D., Charles City
Councilors:	Kenneth D. Dolon, M.D., Iowa City (2) Russell W. Conkling, M.D., Cedar Rapids (3) Robert T. Melgaard, M.D., Dubuque (4) Lester Beechy, M.D., Des Moines (8) John H. Goy, M.D., Des Moines (9) Donald F. Rodowig, M.D., Spirit Lake (13)

The speaker complimented the reference committees and urged the delegates to report the highlights of the meeting to their constituent physicians. Following adjournment of the House of Delegates, Dr. John E. Tyrrell was installed as president of the IMS for the coming year and addressed the House briefly. His inaugural remarks were published in the June issue of IOWA MEDICINE. Organizational meetings of the Board of Trustees and the Judicial Council occurred immediately following the installation.

The 1985 meeting of the House of Delegates will occur in Des Moines on April 20-21 at the Hotel Savery. The IMS Scientific Session will be held in conjunction with the meeting.

*(Please turn to page 292)*



**GOVERNOR BRANSTAD** — The Honorable Terry Branstad, Governor of the State of Iowa, was a special guest at the May 5 Delegates Banquet. Governor Branstad commented on the progress in Iowa health care delivery.



**AUXILIARY PRESIDENT** — Elaine Anderson addressed the IMS House of Delegates on her year as president of the Iowa Medical Society Auxiliary. Mrs. Anderson is the wife of John R. Anderson, M.D., Boone.



REFERENCE COMMITTEE CHAIRMAN — Three physicians performed ably as chairmen of House of Delegates' Reference Committees. Shown above, from left, are Dorothy Gildea, M.D., Davenport; Louis W. Bonitt, M.D., Ames; and John H. Goy, M.D., Des Moines.

Highlights and actions of the Reference Committee reports are summarized as follows:

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**Reference Committee on Reports of Officers and Professional Liability —** John H. Gay, M.D., R. Paul Ferguson, M.D., Donald L. Kahle, M.D., Harold Miller, M.D., and Adrian J. Wolbrink, M.D.

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**House Action:** Instructed the IMS to maintain its open and positive liaison with the Health Policy Corporation of Iowa, and in so doing, take the opportunity to share its concerns and constructive criticisms of actions and communications emanating from HPCI.

**House Action:** Directed the IMS, through its Committee on Alcoholism and Drug Abuse, to continue to pursue, together with other interested agencies, implementation in Iowa of the AMA Prescription Abuse Data Synthesis Program (PADS) with the goal of identifying inappropriate prescribing patterns and sources of diversion of prescription drugs.

**House Action:** Applauded the IMS Board of Trustees for the effective direction it is giving the medical profession in Iowa, and endorsed

a \$25 dues increase, making the 1985 dues level \$300.

**House Action:** Commended the Iowa Medical Foundation and the contributing physician members for their generous support of the Scanlon Student Loan Fund. This Fund exceeded \$1 million in loans to deserving Iowans attending medical school during the 1983-84 academic year.

**House Action:** Approved the development of a medical liability insurance program whereby the American Medical Assurance Company (AMACO) will enter into a partnership with the Iowa Medical Society to (a) supply the short-range liability needs of Iowa physicians, and (b) related to this, AMACO will cooperate with the Society in the creation of an IMS Deductible Trust Fund to permit the accumulation of necessary capital (\$3 million) over an approximate 3-year period to form an IMS-owned and controlled liability insurance company. The organization of the Iowa Deductible Trust Fund will be under the direction of the IMS, as well as the Physicians Liability Insurance Company which is expected to succeed the Trust Fund upon realization of the capitalization requirements.

**House Action:** The preceding Trust Fund is to be kept separate and not intermingled with



other funds of the IMS and is to be used exclusively for the purpose for which it was accumulated.

**House Action:** Members of the 1984 House of Delegates are to encourage full and maximum opportunity for the explanation of this new and important liability insurance program to member physicians all across the state.

**House Action:** Requested the IMS Medico-Legal and Legislative Committees to evaluate the tort system as to further reform and to report findings to 1985 House of Delegates. In making this request, referral was made to the two committees of resolutions having to do with (1) ceilings on awards; (2) elimination of payment for pain and suffering; (3) establishment of a Workers' Compensation type program; (4) removal of the contingent fee concept in favor of another alternate approach; (5) consideration of a loser-pays-all philosophy in malpractice actions, and (6) creation of a prospective payment award system of maximum compensation that can be awarded in a "category related malpractice claim."

**House Action:** Instructed the IMS to continue its active representation within the Health Policy Corporation of Iowa as it studies proposals in the medical liability area which may impact favorably on the cost of health care.

**House Action:** Asked the IMS, and the new mechanism for liability coverage it expects to create, to undertake those professional and public education programs and activities that will reduce the incidence of malpractice and best serve the interests of patients and physicians.

---

**Reference Committee on Articles of Incorporation and Bylaws and Medical Service —** Dorothy Gildea, M.D., Roger I. Ceilley, M.D., John V. Fernandez, M.D., William E. Franey, M.D., and Donald J. Soll, M.D.

---

**House Action:** Directed the informal liaison between the Iowa Medical Society and Blue Shield be continued; acknowledged that communication between the organizations is of the utmost importance and members of IMS are best served by maintaining liaison with Blue Shield; instructed the IMS to closely monitor developments of the Blue Shield Board over the next 2 or 3 years; re-emphasized it is still the choice of each individual physician to participate in Blue Shield; and directed the IMS to continue to work with all third party payors to ensure that organized medicine's voice is heard.

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**IOWA MEDICINE HONORED** — The Society's monthly publication, IOWA MEDICINE, received its fourth award in the Sandoz Medical Journalism Competition in 1984. Receiving the plaque from Sandoz representative Gary Keim is Marion E. Alberts, M.D., Des Moines, right, scientific editor.

**House Action:** Encouraged Iowa physicians to freeze their fees for one year.

**House Action:** Supported the concept of third party reimbursement for physicians' outpatient management and/or education of patients when medically appropriate.

**House Action:** Referred to the Committee on Medical Service for further study of a resolution asking the IMS to strive for greater recognition of cognitive services and work toward reducing the disparity in remuneration for cognitive as compared to procedural services.

**House Action:** Reaffirmed the right of a patient or a physician to seek a second opinion freely from any physician of his choice; opposed the concept of mandatory second opinions or the imposition of financial penalties by a third party payor for not obtaining a second opinion; and supported the concept that when a second opinion is required by a third party, the second opinion should be at no cost to the patient.

**House Action:** Acknowledged Opinions 9.06 and 6.10 in "Current Opinions of the Judicial Council" of the American Medical Association as follows:

9.06 — *FREE CHOICE.* Free choice of physicians is the right of every individual. One may select and change at will one's physicians, or one may choose a medical care plan such as that provided by a closed panel or group practice or health maintenance or service organization. The individual's freedom to select a preferred system of health care and free competition among physicians and alternative systems of care are prerequisites of ethical practice and optimal patient care.

In choosing to subscribe to a health maintenance or service organization or in choosing or accepting treatment in a particular hospital, the patient is thereby accepting limitations upon free choice of medical services.

The need of an individual for emergency treatment in cases of accident or sudden illness may, as a practical manner, preclude free choice of physician, particularly where there is loss of consciousness. Although the concept of free choice assures that an individual can generally choose a physician, likewise a physician may decline to accept that individual as a patient. In selecting the physician of choice, the patient may sometimes be obliged to pay for medical services which might otherwise be paid by a third party.



**NEW COUNCILORS** — Eight Iowa physicians become IMS district councilors this year. Six of them are shown here: seated from left, Bruce Trimble, M.D., Mason City, and Harold W. Miller, M.D., Davenport. Standing from left Donald Soll, M.D., Denison; John H. Gay, M.D., Des Moines, and Russell Conkling, M.D., Cedar Rapids.





ILLUSTRIOUS TELLERS — IMS past-presidents traditionally serve as tellers for the House elections. Shown above, from left, are John Sunderbruch, M.D., Davenport; Paul Seebohm, M.D., Iowa City; Hormoz Rassekh, M.D., Council Bluffs, and William Bliss, M.D., Ames.

6.10 — **COMPETITION.** *Competition between and among physicians and other health care practitioners on the basis of competitive factors such as quality of services, skill, experience, miscellaneous conveniences offered to patients, credit terms, fees charged, etc., is not only ethical but is encouraged. Ethical medical practice thrives best under free market conditions when prospective patients have adequate information and opportunity to choose freely between and among competing physicians and alternate systems of medical care.*

**House Action:** Accepted the new Councilor District plan contained in the Report of the Ad hoc Committee to Recommend Redistricting Plan with the exception that Boone County be moved from Councilor District XIV to Councilor District XI. New Councilor District numbers and counties are as follows:

New District Number	County and/or Counties
1	Des Moines, Henry, Jefferson, Keokuk, Lee, Louisa, Van Buren, Washington
2	Johnson
3	Clinton, Muscatine, Scott
4	Cedar, Jones, Linn
5	Allamakee, Clayton, Delaware, Dubuque, Jackson
6	Black Hawk, Bremer, Buchanan, Chickasaw, Fayette, Howard, Winneshiek
7	Appanaese, Clarke, Davis, Decatur, Lucas, Mahaska, Marion, Manroe, Ringgold, Wapello, Wayne

8/9	Polk, Warren, Madison
10	Benton, Iowa, Jasper, Marshall, Paweshiek, Tama
11	Boone, Grundy, Hamilton, Hardin, Story
12	Butler, Cerro Gordo, Floyd, Franklin, Hancock, Mitchell, Winnebago, Worth, Wright
13	Adair, Adams, Audubon, Cass, Fremont, Harrison, Mills, Montgomery, Pottawattomie, Shelby, Taylor, Union
14	Calhoun, Carroll, Crawford, Dallas, Greene, Guthrie, Ida, Sac, Webster
15	Buena Vista, Cherokee, Clay, Dickinson, Emmet, Humboldt, Kassuth, Lyon, O'Brien, Osceola, Palo Alto, Pocahontas, Sioux
16	Monona, Plymouth, Woodbury

**House Action:** Approved amending Chapter VI, Section 2 of the Bylaws of the Iowa Medical Society by inserting the following sentence. *Notwithstanding the foregoing, members of the Nominating Committee may participate in a meeting of the Committee by conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting pursuant to this provision shall constitute presence in person at such meeting; provided, however, that upon request by any Councilor District the telephone conference will be replaced by an actual physical meeting at Iowa Medical Society headquarters.*

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**PRESIDENTIAL MEDALLION** — New IMS President John E. Tyrrell, M.D., Manchester, has the Society's presidential medallion put in place by retiring President Larson.

**House Action:** Encouraged future IMS presidents to involve younger physicians whenever possible when appointing committee chairpersons and members.

**House Action:** Encouraged individual physicians to educate their patients as to what services can be provided by competent and qualified medical personnel.

**House Action:** Reaffirmed support of IMS policy that peer review should be done by local physicians.

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**Reference Committee on Legislation and Miscellaneous Business** — Louis Bannitt, M.D., John E. McGee, M.D., Gene E. Michel, M.D., Marvin Moles, M.D., and Robert A. Weyhrauch, M.D.

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**House Action:** Requested the IMS to evaluate the need for legislation to give privileged status to information compiled by hospitals for purposes of Medicare Prospective Payment Program.

**House Action:** Instructed the IMS to support

legislative activity to assure safety with regard to the transportation and disposal of hazardous chemicals, and to assure the identification of any hazardous chemicals an individual might contact in his employment or elsewhere.

**House Action:** Reaffirmed existing IMS policy in favor of an annual physical examination of secondary school athletes.

**House Action:** Requested a committee of the IMS, in cooperation with appropriate private and public agencies, to evaluate the feasibility and need for implementing voluntary and mandatory educational programs for children and young adults on the use and misuse of alcohol. Results of evaluations are to be reported to Executive Council or the House of Delegates with recommendations.

**House Action:** Asked that a committee of the IMS evaluate the feasibility of and need for developing educational programs for physicians to assist them in counseling patients on alcohol abuse and misuse. Results of evaluations are to be reported to Executive Council or the House of Delegates with recommendations.

**House Action:** Instructed the IMS to assign a committee to be responsible for evaluating current laws and their enforcement as they relate to drinking and driving. Pursuant to this evaluation, recommendations are to be submitted to the House of Delegates or the Executive Council regarding desirable changes in those Iowa statutes (or the enforcement thereof) which pertain to the consumption of alcohol by operators of motor vehicles.



**THANKS TO MEDICAL ASSISTANTS** — Gwendolyn Jansen, CMA-A, Sioux City, (left), president of AAMA, Iowa Chapter, and Ethel Kunkle, CMA, Stuart, (right) provided apples to the delegates on behalf of the American Association of Medical Assistants, State of Iowa, Inc.



**House Action:** Authorized the IMS to give continuing study to the appropriate class size at the U. of I. College of Medicine and to continue to monitor health manpower trends and needs in Iowa and the nation.

**House Action:** Encouraged the State Board of Medical Examiners to acknowledge the orthopedic physician assistant as an extender of the physician under the Iowa Medical Practice Act and urged the Board to note that state certification of the orthopedic physician assistant is not necessary.

**House Action:** Acknowledged the IMS is concerned with the addictive nature of cough mixtures and with sleeping medications that produce a narcotic effect.

**House Action:** Asked the subject of addictive drug effects in cough mixtures and sleeping medications be referred to the appropriate committee and findings be made available to physicians through various IMS publications.

**House Action:** Directed the IMS to request the Iowa Foundation for Medical Care conduct a medical care evaluation study of addicting drug administration practices in hospital emergency departments.

**House Action:** Authorized the IMS, if necessary, to develop in cooperation with appropriate state agencies voluntary guidelines setting forth appropriate uses for narcotics in the treatment of pain conditions frequently seen in hospital emergency departments.

**House Action:** Encouraged members of hospital medical staffs to seek appropriate review and accreditation of substance abuse units associated with their hospitals.

**House Action:** Acknowledged IMS support for the concept of a mutually verifiable freeze on the testing, production and deployment of nuclear weapons and asked this position be conveyed to the American Medical Association for its information.

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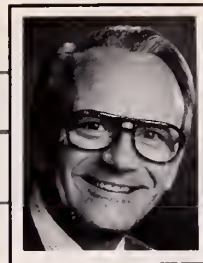


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Marion E. Alberts, M.D.

## COMMENTING EDITORIALY



### DOG DAYS

**T**HE SULTRY TIME of the year from July to early September is dubbed "dog days." There is an old adage that proclaims it is difficult to teach an old dog new tricks. Often, in disgust, we complain things are "going to the dogs" especially on a bad day when we may feel dog tired. Then, perhaps someone will coax us to see the better side of life, and we may be dogged into a new attitude. You may be asking, "What is the dog-gone point of this?"

It is unfortunate that dogs are referred to in such derogatory ways. The dog is considered man's best friend, and truly so. Your editor often uses devious ways to get to a point; sometimes we do not stray but get right to it. I personally am finding it difficult to accept a lot of changes that are coming about. In other words, this old dog is having a difficult time learning some new tricks.

First, I find it difficult to accept the new role of the hospital. I still live in the days when the mission of the hospital was to provide a haven for the very sick person who needed medical or surgical care not available in the home or office. The hospital provided laboratory, x-ray and surgical facilities to complete the diagnosis and permit proper treatment. Now hospital corporations provide not only many diagnostic and treatment modalities, but, in addition, outreach programs covering all forms of social concern. In years' past, there were no such services as "support groups," "encounter groups," "hot lines," "hospital based teaching faculties" (other than "teaching hospitals"), and the like. Hospital corporations now provide office complexes, motel facilities, free standing clinics, surgicenters, and numerous

other ancillary modalities. Do not misunderstand me; I am not totally against all this. I am just old enough that it is difficult to embrace the entire package.

Next, this business of medical fees and the payment thereof is a new problem. It will change even more. The younger physicians have not experienced the days of true doctor-patient relationships. The physician provided the services and hoped and expected that the patient could and would pay the bill. It was a person-to-person arrangement. For the most part it was a good relationship.

Now, the "third party payor" is in the lead role, and if the payment from that source is not forthcoming, the physician is placed in the role of the villain. I do not like playing that role. It doesn't fit my character. Third party payors have promised the best of everything to the patients, and when the load became heavy the doctor received the lashing of the verbal and economic whips.

That brings me to my third area of difficulty. I refer to the cost of medical care: the fees of physicians and the cost of hospital care. The concern is expressed constantly. This year the AMA and many state medical societies have asked for a voluntary freeze on physicians' fees. The hospital associations are confronting a whole new set of reimbursement circumstances. One wonders if other areas of our economy are being impacted so significantly; perhaps so when we follow developments in agriculture, for example.

The days of the \$6 house call and the \$4 office charge are over. Gone they are, and one wonders if some of the present charges are truly justified. For example, I always considered writing a hospital history and physical, and the discharge summary part of my service to the patient and myself — without any added

*(Please turn to page 302)*

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Proof that there really is no substitute for good health.



**Blue Cross  
Blue Shield**  
of Iowa  
Des Moines



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Doug Lind

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## QUESTIONS AND ANSWERS

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### MEDICAL STUDENT PERSPECTIVE

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*Doug Lind will be a sophomore in the University of Iowa College of Medicine this fall. He is a native of Mason City and a graduate of Iowa State University. Following are his viewpoints on physician manpower questions and other important matters.*

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What's the general sentiment among medical students about the future? Is physician manpower the main topic?

Our concerns on physician oversupply tend to focus on residency availability. The idea of at least one residency position for every U.S. medical graduate is the favored feeling. First-year postgraduate positions may fall below this mark if present trends continue. Federal funding for medical education is undergoing extensive evaluation and may even be withdrawn in the future. The problem is compounded by the number of foreign medical graduates competing for U.S. residency positions.

If these trends continue, residents may one day be asked to serve without salary or even pay tuition. A shortage of residency positions may also erode the standards for education and licensure, plus it will frustrate efforts of USFMGs to return home. The whole fabric of medical practice could be altered if we find ourselves with a pool of medical school graduates who cannot find a suitable residency program. They may be forced to begin practice earlier than expected; this could manifest more development of alternate delivery systems.

Does this square pretty much with your personal views?

Yes, I think so. We have much to contemplate in the manpower realm. Do excessive services emerge where there is physician oversupply? And, if so, does this impact on both the quality and cost of care? It seems our problem is one more of distribution than oversupply; there are still many underserved areas. And there appear to be imbalances in specialty distribution as well.

Much clear and innovative thinking needs to be concentrated in this area — with emphasis on creating incentives for young physicians to practice in underserved areas and specialties.

Does today's medical student have much understanding of the changing health care delivery system?

Unfortunately, there is little time in the academic schedule for these matters. Journals are available to help increase student awareness. The College of Medicine is supportive of our efforts to better understand changes in today's health care delivery systems. Opportunities are provided for students to become familiar with the ethical and political issues. Erling Larson, M.D., immediate past-president of the Iowa Medical Society, created good student interest with a recent talk about the increased presence of competition in medicine.

In addition, U. of I. students are participating in local and national task forces covering various issues, e.g., women in medicine, health legislation, international health, etc. There are opportunities for students who take the initiative. We need to take this initiative if we are going to be the future leaders in medicine.

*(Please turn to page 302)*

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## EDITORIAL

(Continued from page 299)

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charges. Yet, third-party payors, the government, and the terminology code books provide some incentive to charge for this. And so it is; the cost goes up.

True, new diagnostic skills and machines are costly. Yes, automobiles and television sets and house payments are costly, too. The spiral goes on and on . . . but the articles we read in MEDICAL ECONOMICS indicate more and more

physicians have become millionaires. For some reason the millionaire businessman is accepted; he is a smart operator. Physicians who are successful are often resented. Why? Because patients have to buy something they did not necessarily want. If the third-party payor does not pay the entire cost, it is resented. That is how our society reacts, a reaction that someday may swing back to a degree of self-reliance again.

So ends my barking for this editorial. No bones, please; just a kindly pat on the head and a "good boy." — M.E.A.

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## QUESTIONS AND ANSWERS

(Continued from page 301)

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**We've seen good growth of membership among students in organized medicine. Why is this?**

This is due partly to increased media coverage of medical issues. The AMA has directed significant attention to student concerns. Seven of the 8 AMA councils have student members. There is a representative of the AMA Medical Student Section in the AMA House of Delegates and on the Board of Trustees. In addition, MSS resolutions have effectively addressed such issues as cigarette smoking, financial aid, Medicare funding for medical education and nuclear war. We have appreciated the opportunity given to medical

students to be part of the debate on medical care directions. It is up to us to take advantage of this opportunity.

**You have participated in the IMS House of Delegates and the Medical Student Section of the AMA. Have these experiences been useful?**

They certainly have. Both have increased my awareness of health policy issues and have provided a stimulating diversion from academic work. I see that the profession I chose may differ from the one I will enter. I hope this exposure to the political, economic and ethical concerns of the day will make me more productive as a leader in the medical community. My interest stems from a fundamental belief in the physician/patient relationship and a compelling desire to preserve it throughout my career.

## CAROTID BODY RESECTIONAL SURGERY

The following statement is offered for the information of Iowa physicians by the Iowa Thoracic Society:

*Carotid body resectional surgery has been advocated by a small group of physicians for many years for symptomatic relief from symptoms of dyspnea associated with asthma and emphysema. To date, there are no studies to substantiate the*

*claim that this therapy is beneficial and, in fact, the resection of the carotid body may blunt the hypoxic respiratory drive and may have a deleterious effect on the patient who is approaching respiratory failure.*

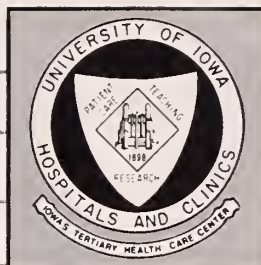
*Therefore, the Iowa Thoracic Society, medical section of the American Lung Association of Iowa, recommends against its consideration or use in patients with lung disease.*

Additional information on this subject is available on requests from IMS headquarters.



University of Iowa Hospitals & Clinics

## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### LANOXICAPS®: A NEW DIGOXIN FORMULATION WITH IMPROVED BIOAVAILABILITY

**B**IOAVAILABILITY, defined as the amount of drug contained in an administered drug formulation which actually reaches the systemic circulation in an unchanged form, is an important determinant of the clinical efficacy of a drug. Major factors affecting bioavailability include the drug's basic physical-chemical properties, its formulation, its interactions with other medications, and the characteristics of the patient taking the drug, such as the presence of various disease states.

For digoxin *tablets* of high quality, the absolute bioavailability varies from 60 to 80%, and this incomplete absorption is associated with significant variation in absorption between individuals and between dosage periods in the same individual. Multiple drug interactions also influence digoxin tablet bioavailability.<sup>1</sup> Physical interaction with the tablet and/or its contents by such medications as cholestyramine,<sup>2</sup> kaolin-pectin,<sup>3</sup> and liquid antacids<sup>3</sup> can produce profound decreases in absorption. Antimicrobials, such as sulfasalazine,<sup>4</sup> para-aminosalicylic acid,<sup>2</sup> and neomycin,<sup>5</sup> which alter gut flora and function, can depress digoxin absorption. This is a separate issue from the conversion of digoxin by

gut flora to an inactive metabolite and the role of antimicrobials in reversing this effect.<sup>6</sup> Digoxin tablet absorption is also affected by medications which alter gut motility. Drugs which decrease motility (e.g., propantheline<sup>7</sup> and diphenoxylate with atropine [Lomotil®])<sup>8</sup> enhance absorption, while those which increase motility (e.g., metoclopramide<sup>7</sup>) reduce absorption.

Because digoxin has such a narrow difference between therapeutic and toxic levels and because large numbers of patients on digoxin routinely subtract and add many other medications (both prescription and nonprescription), a new formulation of digoxin, Lanoxicaps®, was developed in hopes of alleviating many of these bioavailability problems. Lanoxicaps® is formulated by incorporation of digoxin solution in soft gelatin capsules. This encapsulated digoxin solution is about 95% absorbed, and thus its bioavailability approximates that of digoxin administered intravenously.<sup>9</sup> In normal volunteers, there is decreased inter-subject variation in absorption compared to tablets.<sup>9</sup> For patients, capsules produce less variation in absorption from one dose to the next (within-subject variation) than do tablets.

In addition, digoxin capsules appear to decrease problems with digoxin bioavailability due to concurrently administered medications. The decreased absorption of digoxin tablets in the presence of liquid antacids and kaolin-pectin is not seen with the capsules.<sup>10</sup> Based on our own studies, the decreased absorption seen with cholestyramine and the increased absorption associated with propantheline is substantially reduced by capsules. The capsu-

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

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## DRUG THERAPY REVIEW

(Continued from page 303)

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lar formulation also reduces the inactivation of digoxin to cardioinactive metabolites by gut flora and thereby improves bioavailability in this manner.<sup>11</sup>

### TOXICITY

There have been no reports of toxicity peculiar to the capsular formulation as compared to tablets. Capsular formulation does lead to significantly higher *peak* serum concentrations. Because of digoxin's relatively long half-life of *distribution*, these levels do *not* reflect steady-state circumstances, true tissue concentrations, or true evidence of toxicity. Rarely, transient anorexia and nausea may accompany these peak levels occurring about one hour after oral administration of the drug. This should not be considered evidence of true digitalis toxicity. If necessary, this can be avoided by administration of the capsules at the time of a meal. This will decrease peak serum levels without decreasing total absorption.

### DOSAGE

Lanoxicaps® is available in 0.05 mg, 0.10 mg, and 0.20 mg dosages, approximately equivalent to 0.0625 mg, 0.125 mg, and 0.25 mg of digoxin tablets. Another way to approach dosage is to assume essentially 100% bioavailability of the capsules. Thus the *total loading* dose for a patient could be calculated on the basis of 0.01 mg of capsule formulation per kilogram of patient weight.

The 0.05 mg capsular formulation offers some advantage over tablets in terms of titration of dose, since a comparable tablet dose is only available by breaking the 0.125 mg tablets in half. A 0.15 mg capsular size has recently been submitted to the FDA for approval.

### COST

At University Hospitals the current cost to an outpatient for 100 Lanoxicaps® capsules is \$4.79 for 0.05 mg, \$4.79 for 0.10 mg, and \$5.11 for 0.20 mg. The cost per 100 tablets is \$3.55 for 0.125 mg and \$3.22 for 0.25 mg. Based on a limited survey of community based pharmacies, it is estimated that the *incremental* cost of

capsules over tablets should be no more than about \$0.10/day. Thus, while capsules are more expensive than tablets, both formulations are remarkably inexpensive, and the daily increment in cost for capsules is miniscule compared to costs for almost all other cardiovascular medications.

### CONCLUSION

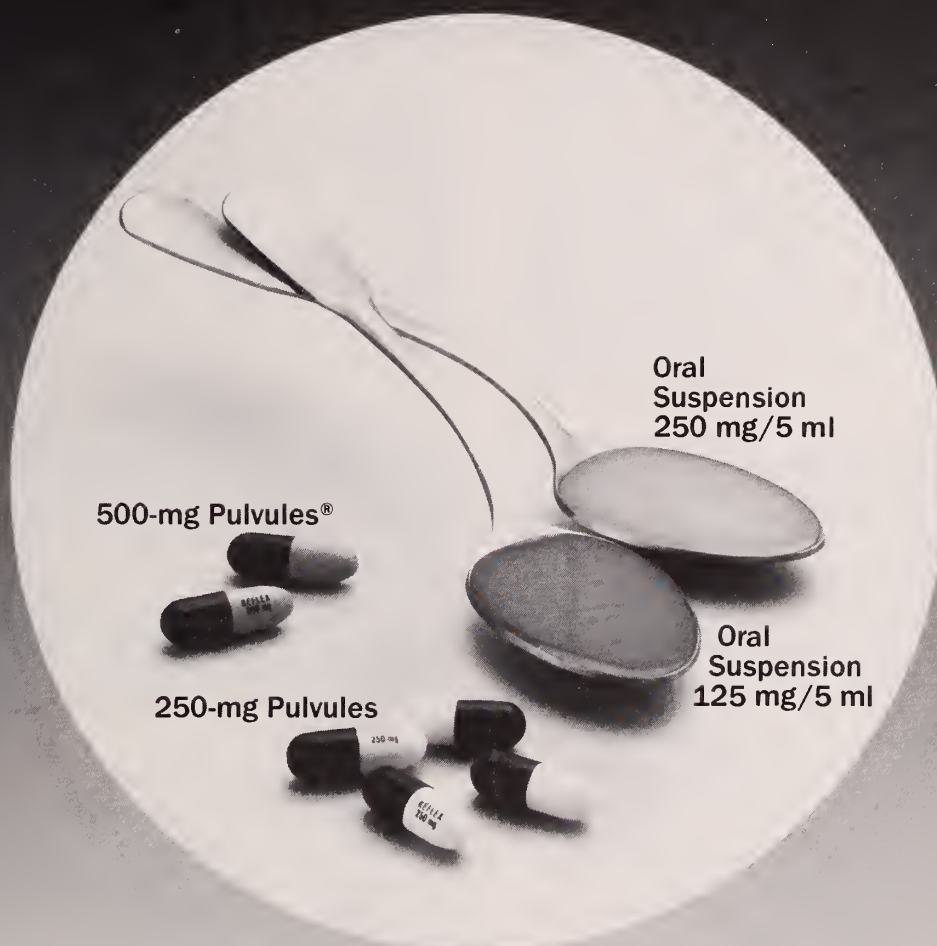
Based on the improved consistency of absorption and diminished variability in bioavailability secondary to both concurrent medications and to inactivation to cardioinactive metabolites, digoxin administration in its new capsular form offers the physician and patient real clinical advantages over tablets in achieving predictable, stable digoxin serum concentrations. For patients currently taking tablets who are having difficulty with inappropriately low or inconsistent digoxin serum levels, conversion to capsular formulation is clearly indicated. For patients taking tablets without problems such conversion is probably not indicated. It is the author's personal opinion, and also that of the research workers in the field of digoxin bioavailability, that capsules should be the formulation of choice for all new patients who are initially to be begun on digoxin. However, there is not a unanimity of opinion with regard to this among the general population of internists, cardiologists, and clinical pharmacologists. — DONALD BROWN, M.D., *Division of Cardiology, Department of Internal Medicine.*

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8. Brown, D., and Juhl, R.: Altered bioavailability of digoxin produced by gastrointestinal medications. *Clin. Res.*, 1979;27:610A.
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11. Rund, D., *et al*: Decreased digoxin cardioinactive-reduced metabolites after administration as an encapsulated liquid concentrate. *Clin. Pharmacol. Ther.*, 1983;34:738-43.



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## Information of Interest

# STATE DEPT. OF PUBLIC HEALTH



## ADVANCED PRE-HOSPITAL CARE IN IOWA

ON MAY 5, 1978, Chapter 147A became Iowa law. The administrative rules (132) went into effect July 5, 1979. This law and the rules established minimums for the various levels of advanced care ambulance service programs. These minimums must be attained before a program can be authorized to function in that capacity.

As of May 17, 1984, Iowa had 104 authorized ambulance service programs; Mary Greeley Medical Center Mobile Intensive Care Services in Ames was the first authorization at the EMT-P level on November 30, 1979.

While the State Department of Health, Emergency Medical Services Section, with the approval of the Advanced Emergency Medical Care Council, gives authorization to the service programs, the State Board of Medical Examiners is responsible for individual certification and approval of the advanced care training institutions. As you will see in the summary outline, the number of hours and the costs vary with each training program.

### EMT-I LEVEL

Program	Didactic	Clinical	Field	Cost
Creighton	85	60	200	\$800.00
EICC	58	40	40-50	1.30/hour
Howkey Tech	65	35	50	200.00
Mary Greeley	NA	NA	NA	NA
Mercy DSM	75	72	80	223.45
Mercy DBQ	51	72	72	200.00
Mercy St Lukes	70	120	40	175.00
NIACC	71	56	48	
SECC	96	70	40	198.70
U of Iowa	42	30	50	100.00
WITCC	61	64	24	308.65
Ottumwa	66	47	67	300.00

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

### EMT-P LEVEL

Creighton	340	160	400	\$2200.00
EICC	273	200	20 runs	1.30/hour
Howkey Tech	238	208	160	750.00
Mary Greeley	296	160	160	800.00
Mercy DSM	284	224	200	857.30
Mercy DBQ	375	184	160	500.00
Mercy St Lukes	322	292	200	600.00
NIACC	216	184	160	
SECC	246	158	115	324.65
U of Iowa	226	200	160	700.00
WITCC	229	160	80	348.00
Ottumwa	248	175	268	750.00

### LEVELS OF SKILL

There are 35 EMT-D service programs in Iowa. The EMT-D has received 120 hours of training in the basic skills and is certified as an EMT-A, with an additional 16 hours in recognizing ventricular fibrillation and defibrillation techniques.

The EMT-ID level of certification has 24 authorized service programs. The EMT-ID has the same training as the EMT-D plus 148 to 345 additional hours of training to perform the following skills:

**Defibrillation Techniques**  
**Peripheral intravenous (IV) insertion**  
**Esophageal obturator airway (EOA)**  
**Esophageal gastric tube airway (EGTA)**  
**Rotating tourniquets**  
**Gastric tube insertion**

There are 16 authorized EMT-I service programs. The EMT-I is certified at the basic EMT-A level and receives 148 to 345 hours of additional training to perform the following skills:

**Peripheral intravenous (IV) insertion**  
**Esophageal obturator airway (EOA)**  
**Esophageal gastric tube airway (EGTA)**  
**Rotating tourniquets**  
**Gastric tube insertion**

At the EMT-II level, there are 8 authorized service programs. The EMT-II receives basic EMT-A training and an additional 300 to 400



hours of training to perform the following skills:

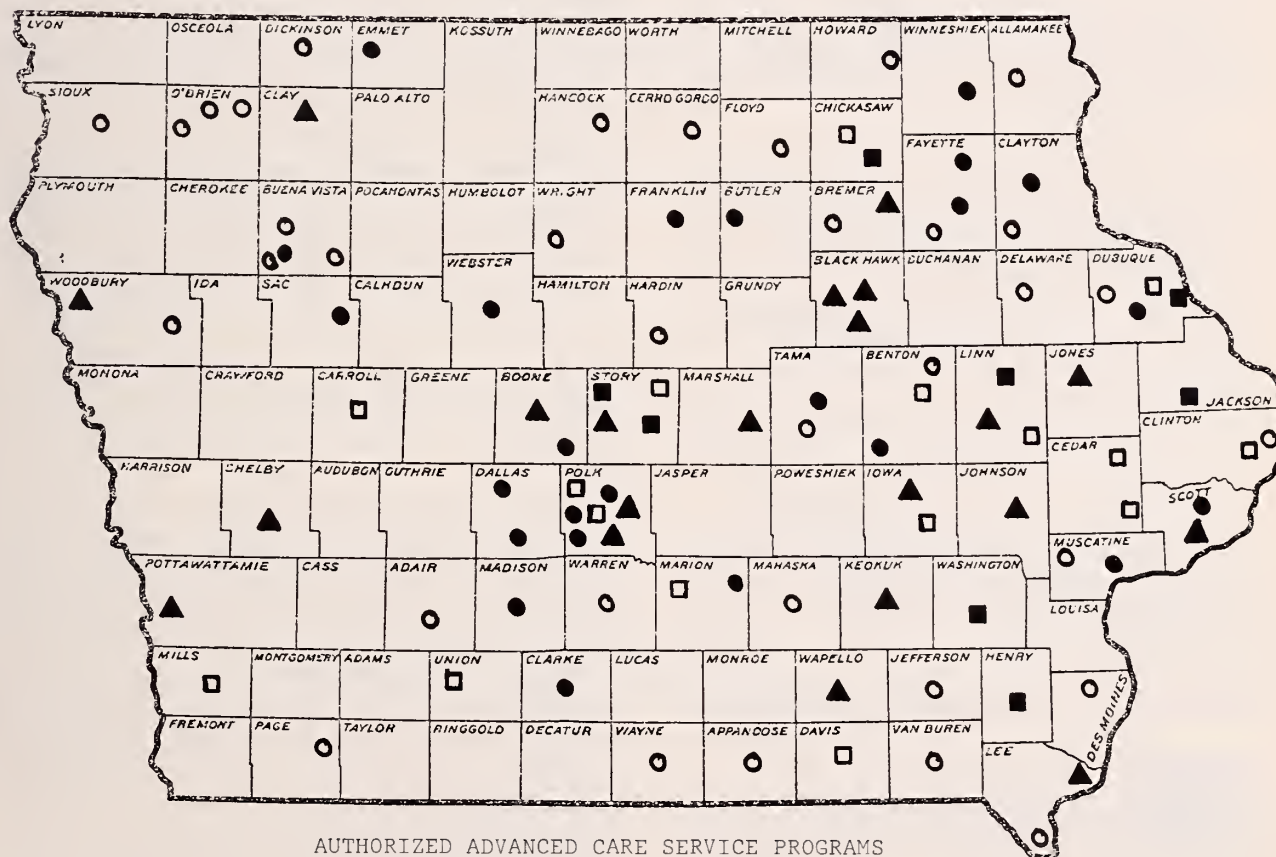
All standard skills listed for EMT-I  
 Drug administration  
 Direct laryngoscopy  
 Endotracheal intubation and suction  
 Arrhythmia recognition  
 Defibrillation techniques  
 Cardioversion  
 External jugular IV insertion  
 Nasogastric tube insertion  
 Urinary catheterization (optional skill)

NOTE: EMT-II training is no longer being offered.

The highest level of certification is the EMT-Paramedic, and there are 21 authorized service programs. The EMT-Paramedic is certified at the basic EMT-A level and then receives 600 to 900 hours of additional training to perform the following skills:

All standard skills listed for EMT-I  
 Drug administration  
 Direct laryngoscopy  
 Endotracheal intubation and suction  
 Arrhythmia recognition  
 Defibrillation techniques  
 Cardioversion  
 External jugular IV insertion  
 Nasogastric tube insertion  
 Urinary catheterization (optional skill)

In conclusion, the many skills listed at the various levels are carried out with medical control and with ACLS certified physicians and registered nurses giving orders via radio to the EMT and Paramedic in the field. Iowa has come a long way since 1978 and will continue to achieve a more sound EMS system in the years to come. This effort by the medical profession and others to work together to improve patient care is noteworthy. — LARRY E. HAZELWOOD, EMT-P.



CP-14807

○ EMT-D  
 □ EMT-I  
 ● EMT-ID  
 ■ EMT-II  
 ▲ EMT-P

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STATESMAN INVESTMENT ADVISORS, INC.

## May 1984 Morbidity Report

Disease	May 1984 Total	1984 to Date	1983 to Date	Most May Cases Reported From These Counties
Amebiasis	12	26	22	Scattered
Brucellosis	0	1	0	
Chickenpox	1434	5928	5115	Scattered
Compylobacter	13	59	73	Scattered
Cytomegalavirus	0	6	7	
Eaton's Agent infection	2	16	98	Johnson
Encephalitis, viral	0	4	18	
Erythema infectiosum	36	36	25	Scattered
Gastroenteritis (GIV)	1032	8400	8068	Scattered
Giardiasis	11	71	69	Scattered
Hepatitis, A	4	14	17	Marshall, Polk, Sioux
Hepatitis, B	4	42	35	Dallas, Palk, Scott
Hepatitis, Non A-B	1	10	21	Allamakee
Hepatitis type unspecified	1	6	6	Dubuque
Herpes Simplex	67	351	423	Scattered
Herpes Zoster	0	2	6	
Histoplasmosis	1	12	10	Waadbury
Infectious mononucleosis	17	93	102	Scattered
Influenza, lab confirmed	12	146	100	Scattered
Influenza-like illness (URI)	3098	30191	27376	Scattered
Legionellosis	0	0	0	
Malaria	0	1	2	
Meningitis aseptic	0	12	26	
bacterial	5	45	73	Benton, Emmet, Kassuth, Polk, Scott
meningococcal	3	16	11	Cass, Osceola, Palk
Mumps	2	16	35	Black Hawk, Story
Pertussis	0	3	4	
Rabies in animals	14	64	103	Scattered
Reye Syndrome	0	1	0	
Rheumatic Fever	0	0	0	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmonellosis	14	88	81	Scattered
Shigelliosis	1	19	12	Scott
Tetanus	0	1	0	
Toxic Shock Syndrome	0	9	9	
Tuberculosis fatal ill	2	30	32	Palk, Wapella
bact. pas.	2	24	26	Palk, Wapella
Typhoid Fever	0	0	0	
Venereal diseases:				
Gonorrhea	321	1772	1838	Scattered
Syphilis	0	10	4	

Other Non-Reportable Diseases: Adenovirus — 2, Linn, Muscatine; Blastomycosis — 1, Johnson; Chlamydia, 1, Palk; Yersinia, 1, Johnson; Ureaplasma urealyticum — 2, Johnson, Palk.



## NEWS/PRODUCTS, PROGRAMS, ETC.

### NEW PRODUCT FOR SKIN DISORDERS —

Diprolene® (betamethasone dipropionate) ointment has been placed on the market by Schering Corporation recently. Clinical trials have demonstrated rapid relief of inflammation, crusting, scaling and itching associated with psoriasis and other dermatoses. The ointment is not recommended for children.

### RECENTLY APPROVED PRODUCT —

G. D. Searle & Co. has introduced Theo-24™ (theophylline anhydrous), the first once-a-day oral theophylline in the United States. The controlled-release capsules will be available in 100 mg, 200 mg and 300 mg dosage strengths. Appropriate doses every 24 hours are said to provide a consistent therapeutic plasma level.

**CHILD CAR SAFETY** — Questor Juvenile Furniture Company has available a variety of educa-

tional materials for use in developing programs of safe transportation of infants and children. A 17 minute slide/tape program is available for loan or purchase. Numerous guides and facts are available for the asking. You may contact them at 1801 Commerce Drive, Piqua, Ohio 45356 (Attn: Safe Passage), Telephone 513/773-3971.

### DESK-TOP BLOOD ANALYZER —

The Eastman Kodak Company has produced a table-top dry chemistry instrument that permits in office tests for glucose, cholesterol, triglycerides, blood urea nitrogen, and uric acid. Tests for bilirubin and hemoglobin will be added in the future. An optional attachment permits measurement for sodium and potassium. Ektachem DT-60, a computerized desk-top analyzer, will be priced at less than \$6,000.

## RECENT BOOKS

Hopkins, Donald R., 1983, *Princes and Peasants: Smallpox in History*, University of Chicago Press, Chicago.

Munley, Anne, 1983, *The Hospice Alternative: A New Context for Death and Dying*, Basic Books, Inc., New York, \$17.50.

Spira, Iris L., 1983, *101 Basic Ideas to Improve Your Practice*, Iris L. Spira, 3616 Dover Drive, Birmingham, Alabama 35223, \$6.50, paper. (The wife of a physician, whose daughter and son-in-law are also physicians, has compiled a very interesting and valuable listing of ideas to improve one's medical practice. These ideas are concerned largely with ethics, patient relationship, as well as professional contacts which may improve the practice productivity. Every young physician should read this publication; every older physician should have read it, or at least learned the principles presented through years of practice.)

Sahu, Saheb, 1983, *Coping With Grief Following Abortion, Stillbirth, and Infant Death*, Mercy Press, Mercy Hospital Medical Center, Des Moines, Iowa 50314. (Doctor Sahu first discusses grief and how to cope with it. He provides reference material. Following his discussion are separate discussions written by parents, each revealing how they were able to cope with abortion, stillbirth, and the death of an infant.)

Franklin, Jon, and Doelp, Alan, 1983, *Not Quite a Miracle*, Doubleday & Co., Inc., Garden City, New York, \$16.95. (Reporters for the Baltimore EVENING SUN, authors of SHOCK-TRAUMA, present a series of neurosurgical case histories. Considerable research was involved.)

Stites, Daniel P., Stobo, John D., Fudenberg, H. Hugh, and Wells, J. Vivian, 1983, *Basic and Clinical Immunology*, 4th edition, Lange Medical Publications, Los Altos, California, \$22.00.

(Please turn to page 310)

Wentworth, Josie A., 1983, *The Migraine Prevention Cookbook*, Doubleday and Co., Inc., New York, New York, \$13.95. (A self-diagnosis, self-help cookbook for victims of migraine.)

Polansky, Norman A., et al., 1983, *Damaged Parents: An Anatomy of Child Neglect*, University of Chicago Press, Chicago, Illinois, \$7.95, paperback. (A study of neglectful parents and the effects upon their children.)

Pare, Ambroise (translated by Janis L. Pallister), 1983, *On Monsters and Marvels*, University of Chicago Press, Chicago, Illinois, \$8.95, paperback. (This 1573 classic work of Pare, translated from the original French into English, is interesting reading for any physician who sees patients with congenital anomalies.)

Glassman, Judith, 1983, *The Cancer Survivors, and How They Did It*, Doubleday and Co., Inc., New York, New York, \$17.95. (An investigation of dozens of cancer victims, considered "hopeless," who triumphed with a will to survive. Written for the cancer patient, traditional methods of treatment, as well as controversial alternative methods, are discussed.)

Weiss, Louise, 1983, *Access to the World — A Travel Guide for the Handicapped*, Facts On File, Inc., 460 Park Avenue South, New York, New York 10016, \$14.95. (This is an excellent reference book for the handicapped traveler, or for anyone who must provide advice to the handicapped. Must a handicapped passenger on Queen Elizabeth II have a companion? "Only if blind." May a passenger on Japan Air Lines have a seeing eye dog aboard? "Yes, harnessed and muzzled." How about Varig Airlines? "Only in the baggage compartment." Hundreds of suggestions are given about ways of obtaining specific information. I know of no other book containing so much data for the traveling handicapped.)

Day, Robert A., 1983, *How to Write and Publish a Scientific Paper*, 2nd edition, ISI Press, Philadelphia, Pennsylvania, \$11.95, paperback, \$17.95, clothbound. (This is a "cookbook" for the writer of scientific papers. Beautifully written, this book has "all you'll ever need to know" about writing for publication, except about what to write.)

## References

1. Stone PH, Turi ZG, Muller JE. Efficacy of nifedipine therapy for refractory angina pectoris. *Am Heart J* 104 672-681. September 1982
2. Antman E, Muller J, Goldberg S, et al. Nifedipine therapy for coronary-artery spasm. Experience in 127 patients. *N Engl J Med* 302 1269-1273. June 5, 1980

## BRIEF SUMMARY

### PROCARDIA® (nifedipine) CAPSULES

For Oral Use

**INDICATIONS AND USAGE: I. Vasospastic Angina:** PROCARDIA (nifedipine) is indicated for the management of vasospastic angina confirmed by any of the following criteria: 1) classical pattern of angina at rest accompanied by ST segment elevation; 2) angina or coronary artery spasm provoked by ergonovine; or 3) angiographically demonstrated coronary artery spasm. In those patients who have had angiography, the presence of significant fixed obstructive disease is not incompatible with the diagnosis of vasospastic angina, provided that the above criteria are satisfied. PROCARDIA may also be used where the clinical presentation suggests a possible vasospastic component but where vasospasm has not been confirmed, e.g., where pain has a variable threshold on exertion or in unstable angina where electrocardiographic findings are compatible with intermittent vasospasm, or when angina is refractory to nitrates and/or adequate doses of beta blockers.

**II. Chronic Stable Angina (Classical Effort-Associated Angina):** PROCARDIA is indicated for the management of chronic stable angina (effort-associated angina) without evidence of vasospasm in patients who remain symptomatic despite adequate doses of beta blockers and/or organic nitrates or who cannot tolerate those agents.

In chronic stable angina (effort-associated angina) PROCARDIA has been effective in controlled trials of up to eight weeks duration in reducing angina frequency and increasing exercise tolerance, but confirmation of sustained effectiveness and evaluation of long-term safety in those patients are incomplete.

Controlled studies in small numbers of patients suggest concomitant use of PROCARDIA and beta blocking agents may be beneficial in patients with chronic stable angina, but available information is not sufficient to predict with confidence the effects of concurrent treatment, especially in patients with compromised left ventricular function or cardiac conduction abnormalities. When introducing such concomitant therapy, care must be taken to monitor blood pressure closely since severe hypotension can occur from the combined effects of the drugs. (See Warnings.)

**CONTRAINDICATIONS:** Known hypersensitivity reaction to PROCARDIA.

**WARNINGS: Excessive Hypotension:** Although in most patients, the hypotensive effect of PROCARDIA is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension. These responses have usually occurred during initial titration or at the time of subsequent upward dosage adjustment, and may be more likely in patients on concomitant beta blockers.

Severe hypotension and/or increased fluid volume requirements have been reported in patients receiving PROCARDIA together with a beta blocking agent who underwent coronary artery bypass surgery using high dose fentanyl anesthesia. The interaction with high dose fentanyl appears to be due to the combination of PROCARDIA and a beta blocker, but the possibility that it may occur with PROCARDIA alone, with low doses of fentanyl, in other surgical procedures, or with other narcotic analgesics cannot be ruled out. In PROCARDIA treated patients where surgery using high dose fentanyl anesthesia is contemplated, the physician should be aware of these potential problems and, if the patient's condition permits, sufficient time (at least 36 hours) should be allowed for PROCARDIA to be washed out of the body prior to surgery.

**Increased Angina:** Occasional patients have developed well documented increased frequency, duration or severity of angina on starting PROCARDIA or at the time of dosage increases. The mechanism of this response is not established but could result from decreased coronary perfusion associated with decreased diastolic pressure with increased heart rate, or from increased demand resulting from increased heart rate alone.

**Beta Blocker Withdrawal:** Patients recently withdrawn from beta blockers may develop a withdrawal syndrome with increased angina, probably related to increased sensitivity to catecholamines. Initiation of PROCARDIA treatment will not prevent this occurrence and might be expected to exacerbate it by provoking reflex catecholamine release. There have been occasional reports of increased angina in a setting of beta blocker withdrawal and PROCARDIA initiation. It is important to taper beta blockers if possible, rather than stopping them abruptly before beginning PROCARDIA.

**Congestive Heart Failure:** Rarely, patients, usually receiving a beta blocker, have developed heart failure after beginning PROCARDIA. Patients with tight aortic stenosis may be at greater risk for such an event.

**PRECAUTIONS: General: Hypotension:** Because PROCARDIA decreases peripheral vascular resistance, careful monitoring of blood pressure during the initial administration and titration of PROCARDIA is suggested. Close observation is especially recommended for patients already taking medications that are known to lower blood pressure. (See Warnings.)

**Peripheral edema:** Mild to moderate peripheral edema, typically associated with arterial vasodilation and not due to left ventricular dysfunction, occurs in about one in ten patients treated with PROCARDIA. This edema occurs primarily in the lower extremities and usually responds to diuretic therapy. With patients whose angina is complicated by congestive heart failure, care should be taken to differentiate this peripheral edema from the effects of increasing left ventricular dysfunction.

**Drug interactions:** Beta-adrenergic blocking agents. (See Indications and Warnings.) Experience in over 1400 patients in a non-comparative clinical trial has shown that concomitant administration of PROCARDIA and beta-blocking agents is usually well tolerated, but there have been occasional literature reports suggesting that the combination may increase the likelihood of congestive heart failure, severe hypotension or exacerbation of angina.

Long-acting nitrates. PROCARDIA may be safely co-administered with nitrates, but there have been no controlled studies to evaluate the antianalgesic effectiveness of this combination.

Digitalis. Administration of PROCARDIA with digoxin increased digoxin levels in nine of twelve normal volunteers. The average increase was 45%. Another investigator found no increase in digoxin levels in thirteen patients with coronary artery disease. In an uncontrolled study of over two hundred patients with congestive heart failure during which digoxin blood levels were not measured, digitalis toxicity was not observed. Since there have been isolated reports of patients with elevated digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing PROCARDIA to avoid possible over- or under-digitalization.

Carcinogenesis, mutagenesis, impairment of fertility. When given to rats prior to mating, nifedipine caused reduced fertility at a dose approximately 30 times the maximum recommended human dose.

Pregnancy. Category C. Please see full prescribing information with reference to teratogenicity in rats, embryotoxicity in mice and rabbits, and abnormalities in monkeys.

**ADVERSE REACTIONS:** The most common adverse events include dizziness or light-headedness, peripheral edema, nausea, weakness, headache and flushing each occurring in about 10% of patients; transient hypotension in about 5%, palpitation in about 2% and syncope in about 0.5%. Syncopal episodes did not recur with reduction in the dose of PROCARDIA or concomitant antianalgesic medication. Additionally, the following have been reported: muscle cramps, nervousness, dyspnea, nasal and chest congestion, diarrhea, constipation, inflammation, joint stiffness, shakiness, sleep disturbances, blurred vision, difficulties in balance, dermatitis, pruritus, urticaria, fever, sweating, chills, and sexual difficulties. Very rarely, introduction of PROCARDIA therapy was associated with an increase in anginal pain, possibly due to associated hypotension.

In addition, more serious adverse events were observed, not readily distinguishable from the natural history of the disease in these patients. It remains possible, however, that some or many of these events were drug related. Myocardial infarction occurred in about 4% of patients and congestive heart failure or pulmonary edema in about 2%. Ventricular arrhythmias or conduction disturbances each occurred in fewer than 0.5% of patients.

**Laboratory Tests:** Rare, mild to moderate, transient elevations of enzymes such as alkaline phosphatase, CPK, LOH, SGOT and SGPT have been noted, and a single incident of significantly elevated transaminases and alkaline phosphatase was seen in a patient with a history of gall bladder disease after about eleven months of nifedipine therapy. The relationship to PROCARDIA therapy is uncertain. These laboratory abnormalities have rarely been associated with clinical symptoms. Cholestasis, possibly due to PROCARDIA therapy, has been reported twice in the extensive world literature.

**HOW SUPPLIED:** Each orange, soft gelatin PROCARDIA CAPSULE contains 10 mg of nifedipine. PROCARDIA CAPSULES are supplied in bottles of 100 (NDC 0069-2600-66), 300 (NDC 0069-2600-72), and unit dose (10x10) (NDC 0069-2600-41). The capsules should be protected from light and moisture and stored at controlled room temperature 59 to 77°F (15 to 25°C) in the manufacturer's original container.

More detailed professional information available on request.

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*Quotes from an unsolicited letter received by Pfizer from an angina patient. While this patient's experience is representative of many unsolicited comments received, not all patients will respond to Procordia nor will they all respond to the same degree.*

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- 2) Angina where the clinical presentation suggests a possible vasospastic component.
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*Please see PROCARDIA brief summary on adjoining page.*

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News About Colleagues

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## ABOUT IOWA PHYSICIANS



**Dr. Ralph Smiley**, former Mason City physician, was honored at the second annual International Symposium on Man and His Environment in Health and Disease. He was cited for his contribution to the study of chemical effects on the lives of humans. Dr. Smiley was associated with the Park Clinic in Mason City for 41 years. In 1977, he joined the staff at the Environmental Health Center in Dallas, Texas. . . . **Dr. Dennis A. Weis**, Grundy Center, recently received the "James E. Kelsey, M.D. Award" for outstanding contributions in the field of alcoholism-chemical dependency. The award recognized Dr. Weis' service to Eldora-Fountain Lake Treatment Center and for his

public education activity. . . . **Dr. Tom D. Throckmorton**, Des Moines, coordinator, surgical residency program, Iowa Methodist Medical Center, recently was elected Emeritus Trustee of the Mayo Clinic. Dr. Throckmorton is only the second physician to be so honored. . . . **Dr. Saheb Sahu**, Des Moines, director, Special Care Nursery, Mercy Hospital Medical Center, has authored a book entitled, "Neonatal Medicine for Family Physicians and Neonatal Nurses." . . . Bluff Medical Center in Clinton recently announced the professional advancement of two of its associates. **Dr. Robert G. Clark** has been admitted to the American College of Surgeons and **Dr. Doug-**

## what's new



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**las Jergenson** has been certified by the American Board of Internal Medicine.

**Dr. James J. Shehan**, Red Oak, recently received the Red Oak Outstanding Citizen Award for 1984. . . . **Dr. David Schweizer** will join **Drs. Edward Schmiedel** and **Paul Royer** in Charles City in August. Dr. Schweizer received the M.D. degree at the U. of I. College of Medicine and is currently completing his family practice residency at North Memorial Medical Center in Minneapolis, Minnesota.

. . . **Dr. T. J. Carroll**, longtime Sibley physician, recently retired. Dr. Carroll received the M.D. degree at the U. of I. College of Medicine and began medical practice in Sibley in 1947.

. . . **Dr. Stanley M. Haugland**, medical director, Powell III Programs, Iowa Methodist Medical Center, Des Moines, was guest speaker at the tenth anniversary and rededication ceremony of the Fountain Lake Treatment Center in Albert Lea, Minnesota. Dr. Haugland was one of those instrumental in starting the chemical dependency treatment unit in Albert Lea.

**Dr. Brian F. McCabe**, chairman of the U. of I. Department of Otolaryngology, recently was named president of the American Board of Otolaryngology. . . . **Dr. James L. Clemens** recently joined **Dr. S. R. Helmers** and **Dr. W. E. Hicks** at the Family Medicine Clinic in Sibley. Dr. Clemens received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at Broadlawn Medical Center in Des Moines.

## DEATHS

**Dr. John M. Schutter**, 68, longtime Algona physician, died May 2 at Kossuth County Hospital. Dr. Schutter received the M.D. degree at the U. of I. College of Medicine and interned at St. Joseph's Hospital in Phoenix, Arizona. He began his medical practice in Algona in 1947, retiring in 1983. Dr. Schutter was a diplomate of the American Board of Family Practice and a charter fellow of the American Academy of Family Physicians.

**Dr. Louis A. George**, 64, Remsen, died May 2 at Floyd Valley Hospital in LeMars, Iowa. Dr. George received the M.D. degree at the U. of I. College of Medicine and interned at Hurley Hospital in Flint, Michigan. He began medical practice in Remsen in 1947. Dr. George was a member of the American Society of Physicians and Surgeons; fellow of the American Academy of Family Physicians; and a past president of the Floyd Valley Hospital medical staff. In 1972, he was named Remsen Citizen of the Year.

**Dr. Robert M. Chapman**, 77, Cedar Rapids, died May 10 at St. Luke's Hospital. Dr. Chapman received the M.D. degree at the U. of I. College of Medicine, and interned at Anker Hospital in St. Paul, Minnesota. He began medical practice in Cedar Rapids in 1932, retiring in 1974. Dr. Chapman was a life member of the Iowa Medical Society, past president of the medical staff at St. Luke's Hospital; past president of the Linn County Medical Society; and served as vice president of the Iowa Medical Society in 1973.

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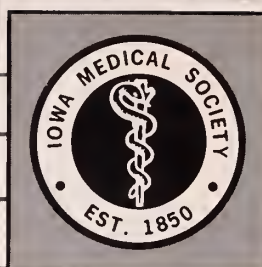
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## IN THE PUBLIC INTEREST



### All About PPS

**L**AST OCTOBER the first Iowa hospitals got their baptismal to the Prospective Payment System (PPS). This new arrangement for governmental payment of Medicare inpatient services was underway. All designated hospitals must be under PPS by September 30.

Most Iowa physicians know, to a greater or lesser degree, that the government's PPS is reshaping the way hospitals are reimbursed for Medicare services. The previous payment of "reasonable cost" for each hospital service is by the board. Now PPS hospitals receive a fixed payment for each of 467 diagnosis related groups (DRGs), regardless of the services provided each patient.

As this is written, 29 Iowa hospitals are in the Medicare PPS fold. When July 1 comes another 99 will have begun having their reimbursement determined via the DRG mechanism.

How extensive is the impact of the Medicare PPS? Very! A 1983 survey of 68 Iowa hospitals showed 44% of the inpatient days were used by Medicare beneficiaries. The number of Medicare admissions was approximately 35%, demonstrating the propensity to longer lengths of stay. Rural hospitals have proportionately higher Medicare volume with more older people apt to reside in their catchment areas.

So, as we know, DRG will be an expansive proposition. The challenge is to understand it, and help others understand it. To this end, the American Medical Association has prepared a booklet, "What Your Patients Should Know About DRGs and the Prospective Payment System." This small volume will assist physicians in answering patient inquiries.

Section III of the booklet (in a Q/A format) is well suited to helping patients (citizens) under-

stand the Prospective Payment System. It states, for example, "Under the PPS hospitals are now paid a flat rate according to one of 467 diagnoses that will categorize the patient's reason for admission and the services he or she received. Formerly hospitals were reimbursed based on the reasonable cost for each service they delivered. . . ."

What are DRGs?

The AMA booklet says, "'DRG' stands for diagnosis related group and is simply a method of classifying patients on the basis of the condition which was responsible for their admission into a hospital. DRGs serve as the basis for payment under the PPS. A DRG is determined by a patient's principal diagnosis, the principal procedures performed, secondary conditions or complications, age, sex, and discharge status. As an example, if you entered the hospital and your diagnosis, as determined by your physician, was *hypertension*, then you would be classified into 'DRG 134,' and your hospital would be reimbursed under that particular classification."

Explaining that DRGs are a new way to pay hospitals, the booklet points out Medicare will supply the same type of benefits as under the former cost-based method of payment. DRGs and PPS are not intended to affect Medicare eligibility, days allowed for inpatient hospital services, deductibles and copayments beneficiaries must assume, etc.

This 24-page AMA booklet is still another public information effort on the part of the medical profession. And another good one. Help in getting a copy or copies of the booklet is available from the Iowa Medical Society.

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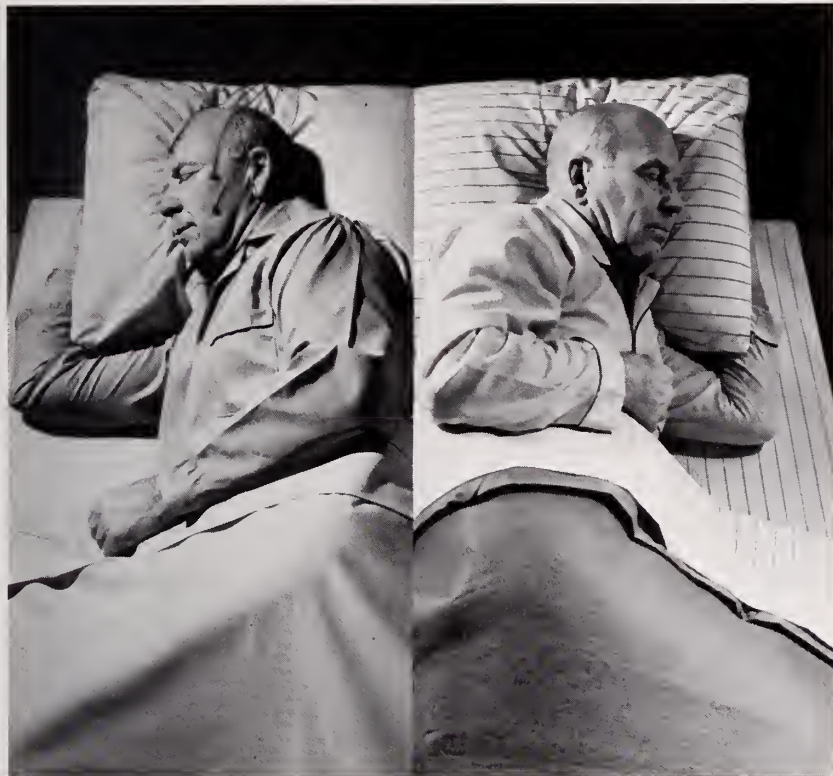
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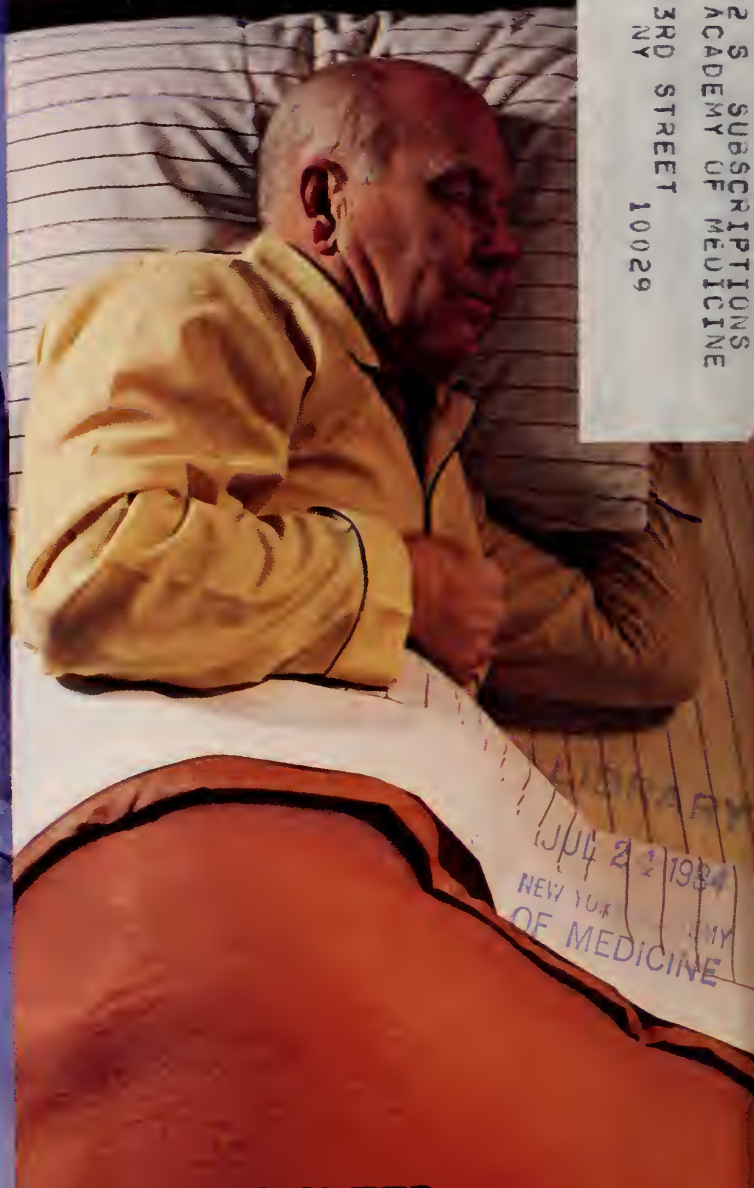
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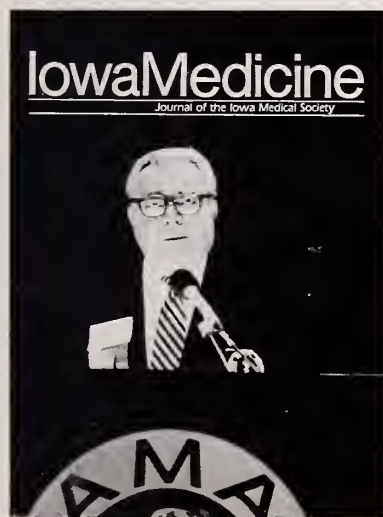
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## ABOUT THE COVER



**ABOUT THE COVER** — John Rhodes, Sr., M.D., ably discharged important responsibilities in June when he served as chairman of a reference committee at the 1984 annual session of the American Medical Association House of Delegates. An Iowa delegate to the AMA, Dr. Rhodes is a family practitioner in Pocahontas. He is shown on the cover presenting the report of the reference committee to the full AMA House of Delegates.

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### QUALITY OF CARE

**H**OW DO we define it? In this day when there is increasing concern about costs, when physicians are asked to use the most cost-effective location to give care and to be prudent in the use of tests and procedures, who decides when this cost effectiveness and prudence starts to decrease the quality of care?

The physician is trained to care for his patient in the best way possible, assuring accurate diagnosis and effective treatment, helping the patient to understand his problem, and dealing with the patient in a compassionate and considerate manner.

The patient has high expectations — of quick and accurate diagnosis through computerized batteries of blood tests and an impressive armamentarium of procedures and machines. The patient expects this quick and accurate diagnosis to be promptly followed by a safe and effective reduction in his symptoms and/or cure of his illness.

More use of cost-effective locations, more prudent use of tests and procedures, and shorter hospital stays will put a strain on the physician's "best possible care" and the patient's expectations. All of these cost-saving measures can lead to an increase in the com-

plications of illness and procedures plus a decreased accuracy and speed in making diagnosis.

So, if we define quality of care as described by physician training and patient expectation and yet practice in this era of cost concern, how do we proceed?

1. By *caring* for the patient, reassuring him of our concern and desire to be of help.
2. By helping the patient understand how we can make best use of his medical care dollars.
3. By working with the patient to help him understand the high priority that good health and medical care should have.
4. By working with the patient to help him stretch his available resources to get the care needed.
5. At all times be our patient's advocate, helping in the most suitable way to get the care the patient needs using the resources available.

It will not be easy, but it is the challenge of this time. As physicians, we must meet it.

*John Tyrrell, M.D.*

John E. Tyrrell, M.D.  
President



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# Iowa Medicine Enters the PRO Era

ROBERT L. MANDSAGER, M.D.

Marshalltown, Iowa

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*The Iowa Foundation for Medical Care was among the first in the nation to be designated a PRO. This early authorization supports a belief that in Iowa we can get things together. This summary discussion by the IFMC president is presented in a further effort to help Iowa physicians understand this new requirement of the federal government.*

---

**I**T'S OFFICIAL. The Iowa Foundation for Medical Care has become one of the nation's first peer review organizations. The Iowa peer review organization (PRO) program began July 1. This point was reached after months of debate, changed schedules, shortened deadlines, and revised instructions.

Representing its physician constituency, the IFMC put in innumerable hours planning, preparing, and submitting this PRO contract proposal. The effort was successful. The Foundation PRO proposal went from contract submission to negotiations to contract signing with no significant stops along the way. The Health Care Financing Administration (HCFA) found our proposal acceptable with only minor

adjustment. Other prospective PROs around the country have been less fortunate.

In the extended application process, the Foundation persuaded HCFA to modify some PRO requirements that differ from the way in which IFMC review is either done or planned. One such important provision embodied in the Iowa PRO program will be the continued use of local physicians for peer review when they are willing to do critical peer review. This provision was sought and achieved in the deliberations with HCFA officials.

Another major change in the federal requirements was attained to allow a PRO board of directors to include representatives of hospitals and health maintenance organizations. Both of the rulings noted here are important to the IFMC.

*What does all this mean to Iowa physicians? What changes will it bring?*

The answer to the first question is most important because of its great significance to Iowa medicine. The fact that the Iowa Foundation for Medical Care is the Iowa peer review organization means our state has more than medical review, it has medical *peer* review. It means quality of care and utilization of service will continue to be reviewed by a large number of practicing physicians. Moreover, a considerable part of this review will continue to be done by local physicians in their own hospitals.

It should be remembered the Iowa peer review system was a model for the federal PRO legislation. This means the changes PRO will bring nationwide will be less dramatic here in Iowa. Most of the changes have nothing to do with the way review is done; they are simply

---

Dr. Mandsager is president of the Iowa Foundation for Medical Care. He is in the private practice of general surgery in Marshalltown.

modifications to the old professional standards review organization (PSRO) program.

One of the most significant alterations is in funding. Unlike PSROs, which were funded by grants that ran sometimes as long as 15 months, PROs are funded through negotiated contracts for set periods of time. The Foundation PRO contract with HCFA began July 1 and is for two years.

Organizations of physicians were given preference in the first PRO contracting cycle. After the initial 2-year agreements, the PRO contracts will be let on a competitive-bid basis. Evaluations will be made as to how the PRO performs in meeting its objectives and how it fulfills the HCFA requirements. There is heavy emphasis on private review, preadmission certification, quality, and outpatient care.

Another difference between PRO and PSRO is that both nonprofit and for-profit organizations can qualify to be peer review organizations. The membership requirements for PRO are changed as well. PROs can either be orga-

nizations comprising a substantial number of area physicians or they can be organizations that have physician services available for review. Insurance companies, health care facilities and associations of such facilities are excluded from entering into PRO contracts for the first 12 months of the program.

As the Iowa PRO, the IFMC is obliged to accept responsibility for administering medical review under the prospective payment system (PPS) now required by the federal government for Medicare hospital inpatient services. This means, in summary, the Iowa PRO will be required to review:

- the diagnostic information provided by hospitals for purposes of payment (DRG verification);
- the completeness, adequacy, and quality of care;
- the appropriateness of admissions; and
- the appropriateness of care provided to "outlier" cases.

Each PRO is required to deal with waiver days in a different manner. The waiver of liability can be removed when patterns of inappropriate utilization persist; the PRO may determine that physicians or hospitals should have been aware that the services were not eligible for payment under Medicare.

Sanctions are also handled differently under the PRO program. Previously, PSRO sanction recommendations were left to the discretion of the Secretary of the Department of Health and Human Services (HHS) with decisions sometimes taking years. Now, sanctions are effective in 120 days after the PRO recommendation, unless HHS acts before then.

Medical peer review has been accepted as a physician responsibility in Iowa for many years. It almost certainly qualifies as a tradition. Hundreds of Iowa physicians have participated in peer review and these numbers are growing. With the help of individual physicians and hospital medical staffs, the Iowa Foundation for Medical Care is prepared to prove that medical peer review can continue to work well in Iowa. As an instrument of the medical profession, we view it as our professional responsibility to manage health care resources prudently without compromising the high quality of patient care.



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Harley G. Feldick, M.D.

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## QUESTIONS AND ANSWERS

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### ANABOLIC STEROIDS/ATHLETICS

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*Dr. Feldick has been associated with intercollegiate athletics at the University of Iowa for a number of years as team physician. He is a member of the Iowa Medical Society Committee on Sports Medicine.*

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#### What are "steroids"?

The steroid referred to in athletics is the anabolic steroid which is a synthetic male hormone.

#### Why are anabolic steroids used by athletes?

Many athletes will do anything either to win or to gain a "slight edge." Other athletes then feel that it becomes necessary to remain competitive.

#### Does the use of androgenic anabolic steroids enhance muscle mass and strength?

There is no effect on muscle size or strength in normal healthy men taking the steroid without training. Studies with volunteers have failed to show significant increases in voluntary strength over controls. However, one must recognize that anabolic steroids in high doses, combined with heavy resistance training, will result in an increase in body weight and muscle mass. This increase in body weight is the result of increased water retention and lean body mass. The therapeutic dose for anabolic steroids may vary from 8 to 30 mgms per day depending on the steroid used. It is re-

ported that athletes may use 200 mgms or more per day. A placebo effect may also be present in the development of muscle size and strength because of the increased intensity of the training program while taking the steroids. It would be well if this controversy could be settled by well-controlled double blind studies. However, because of the high doses taken and the possible adverse effects, no such studies have been reported.

#### What are the adverse effects with the use of anabolic steroids?

The use of anabolic steroids in young boys who are still growing may prematurely close the epiphysis preventing growth to their potential height. Precocious puberty could also be a result of steroid use and increased acne may occur during use of the drug. Testicular atrophy and sperm reduction may occur along with reduced circulating testosterone. Abnormal liver function and primary cancer of the liver has allegedly occurred as the result of the steroid use. Some question has recently occurred that long-term use may predispose to coronary heart disease. Body builders taking high doses of steroids often develop enlarged nipples. This is referred to as "bitch tits" and frequently requires cosmetic surgery. Use of the steroid by women causes masculinization with increased facial hair, voice change, alteration or cessation of the menstrual cycle, and hypertrophy of the clitoris.

#### Is the anabolic steroid a legal drug?

The drug is approved by the Federal Drug Administration for therapeutic use where indicated. It has not been approved for use in enlargement of muscle size and strength. The American College of Sports Medicine has

*(Please turn to page 344)*



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# Congenital Heart Disease In the Adolescent: An Iowa Perspective

DAVID J. SKORTON, M.D.,  
LARRY T. MAHONEY, M.D.  
PAMELA M. STEWART, R.N., CPNP, and  
SUSIE C. TRUESDELL, PA-C  
Iowa City, Iowa

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*As progress continues in cardiovascular diagnostic and therapeutic procedures, the population of patients will increase. As a consequence, the authors emphasize the need for expanded follow-up care will be present. They stress the importance of the primary care physician in this process.*

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**C**ONGENITAL CARDIOVASCULAR DISEASES have traditionally been the province of the pediatrician and pediatric cardiologist. The last three decades, however, have witnessed substantial changes in the diagnostic and therapeutic approach to patients with congenital heart diseases. A wider variety of physicians and other health care providers are now involved in the care of these patients. Further, two factors have resulted in a larger proportion

of patients with congenital heart diseases surviving into healthful, active adolescence and adulthood. First, the natural history of several of the congenital lesions is that of expected survival into adulthood — a tendency probably enhanced by modern medical management.<sup>1</sup> Second, a growing number of congenital disorders of the heart and circulation, simple or complex, are amenable to definitive surgical repair or sophisticated palliation at an early age.<sup>2, 3</sup>

Increased longevity necessitates consideration of several problems unique to the congenital cardiac patient who reaches adolescence and adulthood, including: (a) the effect of superimposed acquired cardiovascular disorders, such as hypertension, coronary artery disease, and infective endocarditis; (b) entry into the reproductive age group, with its attendant considerations of contraception and family planning;<sup>4</sup> (c) education and career planning; (d) insurability;<sup>5</sup> and (e) the psychosocial effects of the underlying cardiac lesion and/or postoperative sequelae.<sup>6</sup>

For optimal management of this spectrum of problems, and the underlying cardiac lesion, the combined expertise of a variety of health professionals needs to be used. One example of the application of such combined expertise is the cooperative care of the adolescent cardiac patient by pediatricians and internists working together. There is well-described precedent for

---

The authors are associated with the Departments of Internal Medicine and Pediatrics, University of Iowa Hospitals and Clinics, Iowa City, Iowa.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT  
SCIENTIFIC PRESENTATION FOR THE MONTH OF AUGUST 1984

this combined approach to the adolescent cardiac patient.<sup>6, 7</sup>

For approximately the last two years, we have been developing a cooperative approach to the adolescent with congenital heart disease at the University of Iowa Hospitals and Clinics. The focus of our efforts is an Adolescent Cardiology Clinic, in which patients with congenital cardiovascular disorders are cared for by a team which includes pediatric cardiologists, internist cardiologists, physician's assistants, nurse practitioners, and pediatrics and internal medicine housestaff physicians. Input from others, including cardiovascular surgeons, geneticists, obstetricians, psychiatrists, and vocational rehabilitation counselors, has brought the broad expertise we believe is necessary for proper attention to the range of problems our patients present.

The advent of surgery for complex heart disease (e.g., modified Fontan procedure for tricuspid atresia or single ventricle, Mustard and Senning procedures for transposition of the great arteries) has not only improved longevity but also is uncovering many unforeseen prob-

lems. Late post-operative complications, such as arrhythmias, following even less complicated "corrective" procedures stresses the importance of following the asymptomatic child into adulthood.<sup>8</sup> Therefore, we must systematically observe the long-term clinical course following our surgical procedures to evaluate present and future techniques and to determine optimal timing of surgery for younger patients with similar defects.

Since many questions remain unanswered concerning the remote effects of the complex surgical procedures recently applied to our patients, those of us caring for them must continue to carefully monitor their functional, physiological, and psychological status. This monitoring must include the observations of the patients' primary physicians. This is especially true in Iowa, where the care of these complex patients is a cooperative venture of the primary physician and the staff of the University Hospital.

The future appears to hold even greater promise and challenges in the care of the older patient with congenital cardiac disease. Continued progress in cardiovascular diagnostic techniques and in surgical approaches to complex lesions will undoubtedly increase the already sizable population of patients with congenital heart disease who present for medical care in the adolescent and adult age groups. It behooves all of us to learn more and to join efforts in the care of this unique group of patients.

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# Artificial Urinary Sphincter and Penile Prosthesis Surgery: Current Status

BERNARD FALLON, M.D., and  
STEFAN A. LOENING, M.D.  
Iowa City, Iowa

---

*Progress has been made in the design of inflatable penile prostheses. This progress is reported along with some of the complications. Other recent advancement in urological prostheses at the University of Iowa is also summarized.*

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THE SURGICAL TREATMENT of impotence became feasible in 1973 with the introduction of the inflatable penile prosthesis and the Small-Carrion rigid penile prosthesis. Also, in 1973, the first models of the American Medical Systems artificial urinary sphincter were clinically tested in incontinent patients. Initial versions of the various prostheses were beset with a variety of complications, resulting in the need for many operative revisions. Because of these problems, we did not begin to use the inflatable penile prosthesis at the University of Iowa Urology Department until 1977. In 1980, we began to use the Jonas semirigid rod prosthesis in preference to the Small-Carrion rod prosthesis, which is not malleable, and is therefore difficult to conceal. In 1983, a new version of the artificial urinary sphincter was

designed. It has been used at the U. of I. for the treatment of incontinence since its introduction.

## SEMIRIGID MALLEABLE PENILE PROSTHESES

From March, 1980 to July, 1983, the Jonas semirigid penile prosthesis was implanted in 57 impotent men at our institution. This prosthesis has an inner core of intertwined silver wires, surrounded by a silicone rubber rod (Figure 1 top). The silver wire core allows the prosthesis to be malleable, thus increasing concealability of the device, and allowing the penis to be manipulated into a flaccid or erect

TABLE I  
JONAS PROSTHESES — 57 CASES  
REVISION OPERATIONS

Larger prosthesis inserted	2
Smaller prosthesis inserted	2
Removal both cylinders	2
Removal one cylinder	1
Debridement penile skin	1
Total	8/57

TABLE II  
INFLATABLE PENILE PROSTHESES  
95 CASES

Removed, infected	5
Switch to semirigid	7
Failed, unrepaired	5
Failed, corrected	29
Total complications	46 patients (47%)
Presently functional in inflatable prosthesis	78 patients (82%)

The authors are associated with the Department of Urology at the U. of I. College of Medicine.



Figure 1. Semirigid Prostheses — Above: Jonas semirigid prosthesis, with silicone rod enclosing silver-wire core. Below: AMS molleable prosthesis, with detachable outer silicone envelope, and 3 sizes of rear tip extenders. One rod can therefore adopt to 8 different sizes.

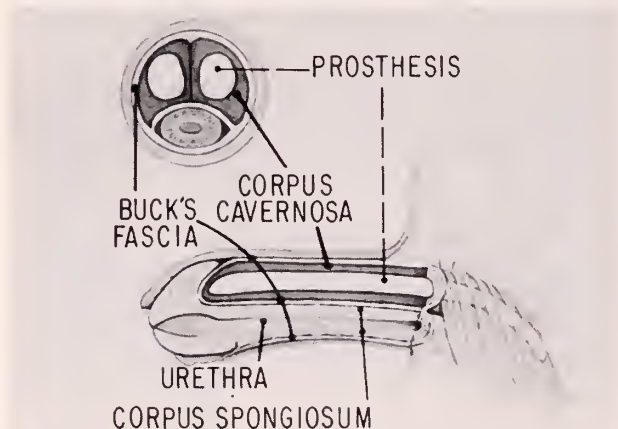


Figure 2. Transverse and longitudinal view of penis showing prosthesis cylinder filling the corpus cavernosum from the glans penis to the ischial tuberosity.

position. One rod is inserted surgically into each corpus cavernosum in the impotent male (Figure 2). The operation is performed through a short penile incision, and takes approximately 45 minutes. There is considerable postoperative discomfort for several weeks, but the patient is usually discharged in 2-3 days.

Of our 57 patients, 8 have had a complication requiring further surgery. Four patients required different size prostheses; 3 patients had infections which resulted in removal of all or part of the device, and 1 patient with a segment of necrotic penile skin required debridement (Table 1).

In 1983, we participated in a clinical trial of a new semirigid prosthesis produced by Amer-



Figure 3. Inflatable Penile Prosthesis — This illustrates the 3 components: the spherical fluid reservoir (top), the control pump (bottom), and the inflatable penile cylinders (left).

ican Medical Systems. While its design resembles the Jonas prosthesis, the rod can be lengthened by the addition of rear tip extenders and narrowed by the removal of a silicone envelope (Figure 1 bottom). Thus, a set of 3 pairs of cylinders can be adapted to an inventory of 24 different sizes. This allows a hospital to stock a full range of sizes for a relatively low capital investment.

#### INFLATABLE PENILE PROSTHESES

The inflatable penile prosthesis (Figure 3) has been used by our department since January, 1977. As of July, 1983, 95 patients have had this device implanted. This prosthesis allows a controlled erection (Figure 4), and easy concealability. The operation is performed through a suprapubic or scrotal incision, takes about 2 hours to perform and requires about 4 days of postoperative hospitalization. The major disadvantage of the device is the rather common incidence of mechanical breakdown. Five of our patients have had infections requir-



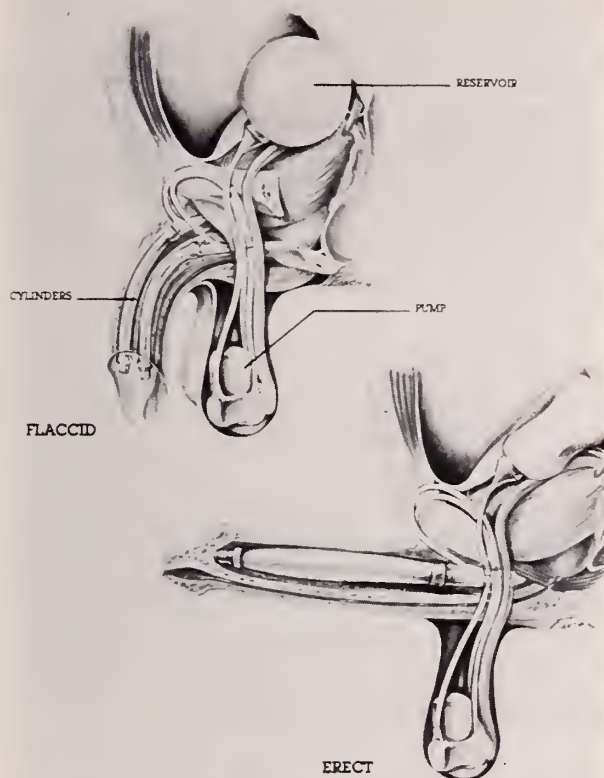


Figure 4. The Inflation Penile Prosthesis In Situ — The reservoir is implanted in the abdomen, the control pump in the scrotal subcutaneous tissue, and the expandable cylinders in the corpora cavernosa. Inflation of the cylinders produces penile erection.

ing removal of their prosthesis. Forty-one others have suffered a total of 59 complications of a mechanical nature. Seven of these patients switched to a semirigid prosthesis; 5 refused corrective surgery, and the others have had their prostheses repaired by operative intervention (Table 2). Eighty-two percent of our patients continue to have a functional inflatable penile prosthesis, and express great satisfaction with the device. As improvements have been developed in the design of this prosthesis, we have noted a decrease in the complication rate.

#### ARTIFICIAL URINARY SPHINCTER

Perhaps the most significant recent advance in urological prostheses is the development of a reliable artificial urinary sphincter for treatment of male and female urinary incontinence (Figure 5). This device allows a silicone sphincter to be implanted around the urethra, either

*(Please turn to page 338)*



Figure 5. Artificial Urinary Sphincter — The components are the urethral cuff (top left), the control pump (right), and the pressure-regulating balloon (lower left).

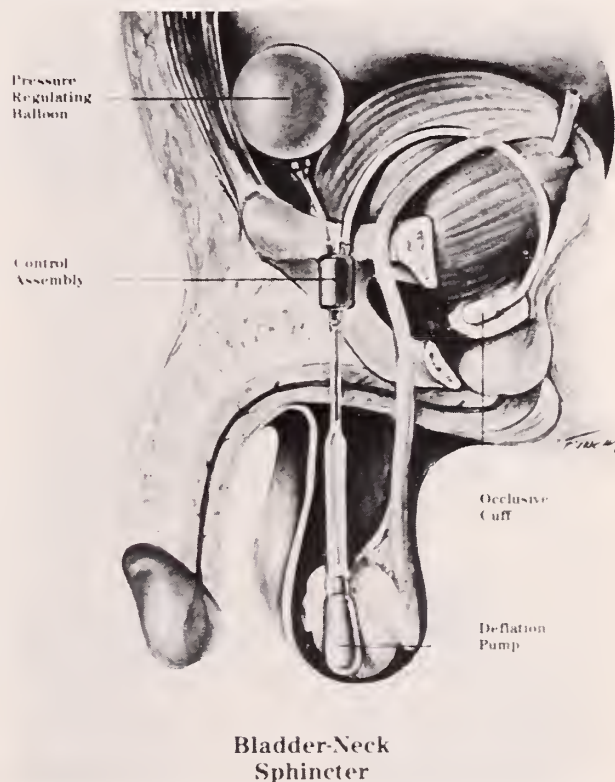


Figure 6. Artificial Urinary Sphincter In Situ — The urethral cuff (situated here at the bladder neck) is deflated to allow voiding by squeezing the intrascrotal deflation pump. After 2-3 minutes, the abdominal pressure-regulating balloon automatically reinflates the urethral occlusive cuff.

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(Continued from page 337)

at the bladder neck or in the perineal area. The patient can deflate the sphincter by means of a control pump implanted in the scrotum or labium. The patient can then void, and pressure is automatically restored to the sphincter cuff by a pressure-regulating balloon implanted in the abdomen (Figure 6). The surgical insertion of this prosthesis takes about 2 hours, and the patient is hospitalized for 4-5 days.

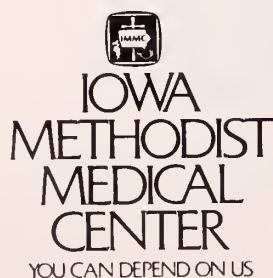
We have performed this procedure in 6 male and 1 female patients suffering from total urinary incontinence. All have had their incontinence corrected, and so far none have had any complications. Mechanical failures may be expected with this device, however, and erosion of the urethra by the sphincter cuff requiring its removal has been reported. Any postoperative infection would require removal of the prosthesis. This prosthesis appears, though, to be an effective tool for the treatment of urinary leakage and its associated misery.

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# Immanuel Medical Center



Announcing . . .

## Oncology Fellowship Program September 13-14, 1984

A two-day continuing education program in Oncology for primary care physicians will be held at Holling Education Center, Immanuel Medical Center, September 13-14, 1984. This program is designed to enhance physicians' diagnosis, treatment and follow-up skills in dealing with the most prevalent oncology diagnoses. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of Dinner Theater together on Thursday, September 13. Participants are housed at the beautiful new Immanuel Plaza Motel on the Medical Center campus.

### First Day

Introduction to Cancer  
John B. Davis, M.D.  
Principles and Treatment of Cancer:  
Radiation Oncology  
Chemotherapy  
David J. Harter, M.D.  
Herbert A. Hartman, Jr., M.D.  
Imaging Modalities  
Paul Bender, M.D.\*  
W. Benton Copple, M.D.\*  
Primary Oncologic Emergencies  
John J. Hoelsing, M.D.  
Colon Cancer Update  
Mark Christensen, M.D.  
Tumor Markers  
Thomas A. Ruma, M.D.  
The Black Spot — Malignant Melanoma  
John F. Latenser, M.D.  
Lung Cancer Update  
Leonard Moss, M.D.  
David A. Hughes, M.D.  
The Role of the Family Physician in  
the Treatment of Cancer  
Ronald C. Bell, M.D.  
Tour of Radiation Oncology

### Second Day

Tumor Conference  
John B. Davis, M.D., Moderator  
Panel — Medical Staff representing Hematology, Medical  
Oncology, Pathology, Gynecology, Surgery, Radiology, Urol-  
ogy, General Family Practice, Internal Medicine  
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William A. Shiffermiller, M.D.  
Prostatic Carcinoma  
Stewart E. Sloan, M.D.\*  
Gerald C. Felt, M.D.\*  
Liver Pumps and Hickman Catheters  
Thomas Connors, M.D.  
Follow-Up of Cancer Patients  
John B. Davis, M.D.

\* Session presenter rotates for each Fellowship Program.

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402) 572-2340.





# Immanuel Medical Center



Announcing . . .

## Cardiology Fellowship Program September 20-21, 1984

The Cardiology Fellowship, to be held at the Holling Center on September 20-21, 1984, is a two day intensive program for primary care physicians. The program is designed to enhance diagnostic, treatment and follow-up skills in caring for the cardiac patient. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of Dinner Theater together on Thursday, September 20. Participants are housed at the beautiful new Immanuel Plaza Motel on the Medical Center campus.

### First Day

Differential Diagnosis of Chest Pain  
Richard E. Collins, M.D.  
Electrocardiography  
Richard E. Collins, M.D.  
Treadmill Testing  
Steven J. Diamantis, M.D.  
Current Therapy for Angina Pectoris  
Michael M. Dehning, M.D.  
Percutaneous Transluminal Coronary Angioplasty  
Richard E. Collins, M.D.  
Cholesterol and Coronary Artery Disease  
Joseph M. Rapoport, M.D.  
Coronary Bypass Surgery  
David A. Hughes, M.D.  
Current Methods of Myocardial Infarction Reduction  
Steven J. Diamantis, M.D.  
After Infarct — What Next?  
Michael M. Dehning, M.D.  
Case Studies  
Richard E. Collins, M.D.  
Michael M. Dehning, M.D.

### Second Day

Bedside Exam of Cardiac Patient  
Richard E. Collins, M.D.  
Echocardiography  
Michael M. Dehning, M.D.  
Valvular Heart Disease  
Richard E. Collins, M.D.  
Current Therapy of Congestive Heart Failure  
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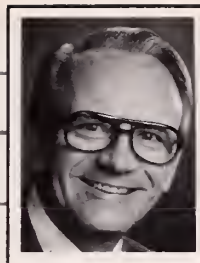


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Marion E. Alberts, M.D.

## COMMENTING EDITORIALY



### IDEALS AND RESPONSIBILITY

**I**DEALS ARE the most powerful force known to man. No nation's greatness long survives the lowering of the greatness of its ideals. And, as with nations, so with individuals. Low ideals and high station cannot long retain company. We all must have ideals unless we are content to drift along aimlessly, ambitionless, ineffectually. Ideals revitalize, ideals energize. — B. C. FORBES\*

*We never reach our ideals, but the thought of them spurs us on to higher and better things.* — TRYON EDWARDS

*No matter how noble the objective of a government, if it blurs decency and kindness, cheapens human life, and breeds ill will and suspicion — it is an evil government.* — ERIC HOFFER

These thoughts are significant as I write on this special day in the history of the United States. Independence Day is a time to remember the noble ideals of those who signed the Declaration of Independence in 1776. Two hundred and eight years later it becomes necessary for us to reflect seriously upon our heritage, as well as upon our future. Many elderly citizens speak of the good old days when they face the uncertainty of the future. Many who live on fixed incomes have rightly become disillusioned over promises made but ultimately shattered by the cancerous invasion of inflation. Their lifestyles have been made spartan as benefits promised by vote-seeking

politicians have been curtailed. Cutbacks, added taxes and complicated rules and regulations have become commonplace.

The health professions are blamed too frequently for the high cost of health care furnished to the elderly. Years ago when the promises were made many factors were either unknown or blatantly ignored by the lawmakers.

To impact on the promises, life expectancy has increased. This predictable factor has hiked the percentage of elderly in our population. The people of the United States are living longer; consequently, they require more of the services available to maintain their health. Secondly, the health professions have much more to offer the elderly in the way of preserving good health and in treating many previously fatal disease states. New diagnostic and treatment approaches for older people have required increased "health dollars."

Furthermore, our way of life in the United States has changed vastly. We expect to live better, and we do. Our lifestyle is more luxurious; we want the best. Hospitals are no longer dark and dismal halls of suffering; comfortable appointments are part of the provision of health care. Sophisticated care is commonly demanded and provided. The public perception of medical care is a strong force in the high cost of health services. Our ideal is that of expecting and delivering the best; out of the emerging belief that anyone has the right to seek the best of everything.

But the word comes back that even though it may be a "right," as declared by the lawmakers and policy-vendors, it must come cheap . . . cheap at the expense of that segment of the population that also has the "right" to seek the good life.

Much lamenting was heard about the exorbi-

*(Please turn to next page)*

\* Forbes, B.C.: FORBES, July 16, 1984, p. 184.

tant bonuses paid to chief executive officers of big businesses. Yet, they retort, "we earned it." You do not hear many congressmen suggesting their salaries, fringe benefits, and questionable use of federal funds for junkets should be curtailed. If those elected positions were not so enticing because of the "perks," why are millions of dollars spent in election campaigns.

Let our ideals, like those who signed the Declaration of Independence, be of high order — and possessing of responsibility. Blaming

some without accepting equal blame is detrimental. We need to revitalize our ideals. Let those who think they know all the answers be honest with us and themselves. Those who profit and promote only personal pleasure deserve to be criticized. Those who attempt to provide a good healthful life for others and also seek similar circumstances for themselves deserve encouragement. Granted, there are opportunities in every walk of life; my hope and belief is that high ideals dominate our profession — not greed or excess. — M.E.A.

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## QUESTIONS AND ANSWERS

*(Continued from page 331)*

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made a position statement against the use of the steroid. Prescribing the drug for indicated therapeutic reasons is legal. Prescribing or dispensing the steroid for use by the athlete for muscle and strength development is certainly unethical.

### **What laboratory tests have been performed on the athletes connected with the Olympics?**

A number of lab tests have been devised for detecting drugs in athletes. One test is for the presence of abnormal steroids. The test for steroids is reported to be very sensitive and can detect the use of the steroid for as long as 6 months or more prior to the testing. The proposed plan is to test the first, second and third place winners and other athletes at random. Any detection of previous use of the steroid will disqualify the athlete.

The National Collegiate Athletic Association is developing a program for testing the university and college athletes. All indications are that the Big Ten universities will have a testing program in effect by the 1984-85 academic school year.

Recently, the anterior pituitary growth hormone has been used for enhancement of size and strength. Use of this hormone in the growing individual could produce abnormal growth. Use in the mature individual could present the risk of developing acromegally.

### **Comment in summary on this subject.**

Anabolic steroids are widely used by athletes, particularly in the strength and weight programs. The long-range effect of the use of the steroid is not known. Any steroid or hormone used in high doses can disrupt the balance of the hormonal system in that they are all closely interrelated. It would certainly be beneficial if well-controlled studies could be accomplished to determine the status of the steroid.

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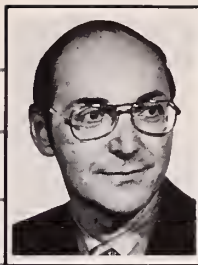
Richard M. Caplan, M.D.

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## OUR MAN IN EDUCATION

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### AN INNOCENT ABROAD

**M**ARK TWAIN's travels to Europe in 1869 led him to write that marvelously witty and insightful account of his adventures, *Innocents Abroad*. His recital was particularly telling to one who had also been there, as I had, and could fully savor his satire. I was there again recently, having a great time in many ways, but by having become a physician in the meantime, I observed many things that brought special interest and satisfaction.

For example, a young man, perhaps 24, was drinking beer at a stand-up bar in the Munich train station. His arms were stunted and each hand had but 2 stubby "fingers" with which he lit his cigarette and drank his beer adroitly. I remembered it was a German physician, Widukind Lenz, who in 1961 first suspected the role of thalidomide when, during a short period of time, a distressing number of babies were born in Bavaria and Austria with the previously rare problem of phocomelia. This young man's age and his native German speech assured me I was seeing one of that original group of thalidomide babies. But of course, I'll never know surely enough to win the mental bet I made with myself.

Then there was the apothecary shop in Salzburg, the outdoor sign of which trailed a separate sign beneath it saying "Homöopathie." That made me recall that the birthplace of Samuel Hahnemann, founder of homeopathy, was in Southern Germany and it's perhaps not so surprising that his influence might linger in that area even today, 141 years after his death. (The University of Iowa catalogue, by the way, offered courses in homeopathy until 1961,

although none had actually been given since long before that. The listing of one or two courses in the catalogue satisfied a lingering provision in the Code of Iowa that reflected a compromise from the founding years of the present College of Medicine.) A few blocks away was the "Paracelsus Therapy Hall," named for the famous 16th century physician-chemist-scientist, who is buried in Salzburg. He along with Mozart and skiing put Salzburg on the map of today's tourism. And speaking of signs that hang beneath other signs, there was the marvelous tidbit in London beneath the sign of the Cheshire Cheese Pub near Fleet Street — "Rebuilt in 1667." So much for any Iowan with pretensions about Iowa's antiquity in the main stream of western civilization.

Vienna's Central Plaza boasts a stunning monument built by a local ruler in 1679 who was eager to give thanks to God for ending the plague that had been ravaging the city. If anyone thought to do anything of the kind today, such a monument might more likely show a syringe or a representation of a tissue culture than angels and other heavenly symbols. Billroth Strasse in Vienna, near the enormous general hospital, calls to mind their famous surgeon who used to play chamber music with Brahms, whose statue graces a major city park. I recall that Austria was the site of a major example of occupationally induced disease — the lung cancer "epidemic" in workers who spent years painting radium on watch hands. You may well have had such a watch, as I did. Areas in Austria yielded not only the pitchblende for such radium but also supplies of ichthammol, that splendid, gentle tar derived from the residues of ancient fishes, that can be so useful in treating chronic dermatitis.

And so the physicianly perceptions continue. It gives testimony to the old aphorism that what you see depends on where you stand.

---

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

# An added complication... in the treatment of bacterial bronchitis\*

Increasing incidence  
of ampicillin resistance in  
*Haemophilus influenzae*

Ampicillin-Resistant  
*Haemophilus influenzae*

*H. influenzae*

*S. pneumoniae*

## Brief Summary Consult the package literature for prescribing information.

**Indications and Usage:** Ceclor® (cefadroxil, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

**Contraindication:** Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions: General Precautions**—If an allergic reaction to Ceclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy—Pregnancy Category B**—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers**—Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Ceclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Ceclor.<sup>7</sup>

# Ceclor®

## cefadroxil

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor® (cefadroxil, Lilly) is administered to a nursing woman.

**Usage in Children**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions:** Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome. Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain**—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Ceclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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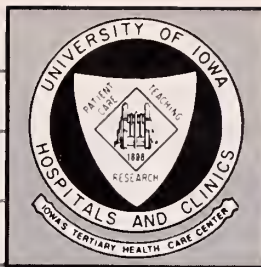
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## DRUG THERAPY REVIEW



Robert J. Roberts, M.D., Editor

### PREDICTION OF STEADY STATE THEOPHYLLINE CONCENTRATION DURING DRUG INFUSION

**T**HE MEASUREMENT of drug concentrations in a patient over time is useful when the target concentration strategy can be shown to be effective for that drug. This means that drug concentration can be directly related to a desired pharmacological effect (efficacy) and usually also to an undesired pharmacological effect (toxicity). During continuous drug infusion, for example, the desired target drug concentration can always be achieved in a patient by combined use of drug concentration measurements and subsequent incremental dosage adjustments until the desired concentration is closely approximated. Although a "hunt and peck" approach to reaching the target concentration is a *feasible* approach, it is not usually an *optimal* strategy. An optimal strategy would quickly achieve effective drug concentrations with the minimum number of drug assays while still avoiding toxicity: the patient would receive as soon as possible, maximum therapeutic benefit with the minimum use of expensive resources.

The following discussion deals with optimal continuous, intravenous administration of theophylline to a seriously ill asthmatic patient; the goal is to achieve a desired target concentration quickly without overshooting and producing drug toxicity. The simplest pharmacokinetic model that can be used is a

one compartment model with first-order elimination from this compartment (linear assumption). There are only 2 unknowns in this model: the volume of the compartment ( $V$ ), and the first-order rate constant of elimination ( $k_e$ ). The parameter with the greatest interindividual variation is  $k_e$ . For theophylline, a constant volume of distribution of about 0.5 L/kg can be assumed, as the measured range for this parameter is usually small. Estimation of  $k_e$  from measured concentration-time data during the initial infusion would then allow calculation of an optimal infusion rate to maintain a target theophylline concentration. The equation for describing drug concentration as a function of time for continuous, constant rate infusion into one compartment with first-order elimination is given in Equation 1 below.

**Equation 1:**  $C_t = (C_o - C_{ss}) \exp(-k_e t) + C_{ss}$

$C_t$  = serum concentration at time  $t$  after start of infusion

$t$  = time after start of infusion

$C_o$  = concentration at the start of infusion

$k_e$  = first-order elimination rate constant

$C_{ss}$  = steady state concentration

$C_{ss}$  which is approached as time increases can also be expressed in terms of other parameters as shown in Equation 2:

**Equation 2:**  $C_{ss} = k_o / (k_e V) = k_o / CL$

$k_o$  = trial infusion rate (mg/hr) (zero-order)

$V$  = volume of distribution (L)

$(k_e V)$  = clearance of drug (CL) (L/hr)

A simple approximation derived from Equation 1 was developed by Chiou *et al.*<sup>1</sup> to estimate the drug clearance during the initial infusion from two suitably spaced concentration-

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

## DRUG THERAPY REVIEW

(Continued from page 347)

time points. This approximation is given in Equation 3.

$$\text{Equation 3: } CL = \frac{2k_o}{C_{t1} + C_{t2}} + \frac{2V(C_{t1} - C_{t2})}{(t_2 - t_1)(C_{t1} + C_{t2})}$$

$CL$  = calculated clearance in L/hr

$k_o$  = current infusion rate

$C_{t1}$  = concentration at first time ( $t_1$ )

$C_{t2}$  = concentration at second, later time ( $t_2$ )

$V$  = volume of distribution

Once a value for  $CL$  is obtained a new infusion rate ( $k_o$ ) can be calculated from Equation 2 to attain a desired steady-state concentration ( $C_{ss}$ ).

Example calculation using Equation 3

- 70 kg patient initial  $k_o = 1 \text{ mg/(kg hr)}$  x  
70 kg = 70 mg/hr  
 $C_{t1} = 10 \text{ mg/L}$   $C_{t2} = 15 \text{ mg/L}$   
 $\Delta t = t_2 - t_1 = 5 \text{ hr}$   
 $V = (0.5 \text{ L/kg}) \times 70 \text{ kg} = 35 \text{ L}$   
 $CL = \frac{(2)(70)}{(10 + 15)} + \frac{(2)(35)(10 - 15)}{(5)(10 + 15)}$   
 $= 70/25 = 2.8 \text{ L/hr}$
- Predicted  $C_{ss}$  at initial  $k_o$   
 $C_{ss} = k_o/(CL) = 70 \text{ mg/hr}/(2.8 \text{ L/hr}) = 25 \text{ mg/L}$
- Calculation of new  $k_o$  to give  $C_{ss}$  of 20 mg/L  
 $k_o = C_{ss} \times CL = 20 \text{ mg/L} \times 2.8 \text{ L/hr} = 56 \text{ mg/hr}$

For proper use of the Chiou approximation, we need a precise infusion pump, a precise theophylline assay, and an adequate difference between concentrations at the two times.

### THE CHIOU MODEL IN PRACTICE

The clinical use of the Chiou equation has been prospectively evaluated by a number of groups.<sup>2-5</sup> Vozech *et al.*<sup>2</sup> used serum concentrations obtained at one and 5 hours after the start of continuous infusion to predict steady state theophylline concentrations in 15 acutely ill asthmatics. Prediction errors were calculated by subtracting the measured steady state concentration from the predicted concentration. With a liquid chromatographic assay for theophylline, a mean prediction error of  $-0.022 \text{ mg/L}$  ( $SD = 1.97$ ) was obtained and an error range of  $-3.4$  to  $3.3 \text{ mg/L}$  was observed; use of a manual EMIT theophylline assay gave an average prediction error of  $0.58 \text{ mg/L}$  ( $SD = 3.88$ ) with an error range of  $-3.6$  to  $8.4 \text{ mg/L}$ .

Both assays gave predictions much superior to simply using population averages of drug clearance which took into consideration effects of smoking, congestive heart failure, and cirrhosis: the average prediction error based on population averages was  $3.62 \text{ mg/L}$  ( $SD = 13.36 \text{ mg/L}$ ) with an error range of  $-9.4$  to  $31.5 \text{ mg/L}$ . In a subsequent study Vozech *et al.*<sup>3</sup> demonstrated the increased efficacy of  $20 \text{ mg/L}$  steady state theophylline concentration as compared to  $10 \text{ mg/L}$  in patients with severe acute bronchial obstruction using a double-blind randomized protocol. The Chiou method was used to quickly obtain the desired concentrations. In 19 patients, the average prediction error was  $1.15 \text{ mg/L}$  ( $SD = 1.67 \text{ mg/L}$ ) with a range of prediction errors from  $-2.5$  to  $4.2 \text{ mg/L}$ . One patient became toxic ( $29.0 \text{ mg/L}$ ) because of an infusion error.

Mungall *et al.*<sup>4</sup> evaluated the Chiou method and an iterative predictive method in 15 patients receiving intravenous aminophylline. The prediction error averaged  $0.9 \text{ mg/L}$  ( $SD = 2.0 \text{ mg/L}$ ) with a range of  $-3.1$  to  $4.9 \text{ mg/L}$ . The iterative solution of the one compartment model gave results essentially similar to the Chiou approximation.

Anderson *et al.*<sup>5</sup> also evaluated both an exact iterative approach and the Chiou approximation in 19 patients with chronic obstructive pulmonary disease treated with theophylline infusion. The average difference between the estimated and measured drug clearance was not statistically different from zero in either method. When FDA dosage guidelines were used, however, all 19 patients had predicted subtherapeutic steady state theophylline concentrations (mean =  $4.2 \text{ mg/L}$ ). With the clearance estimation methods, 13 of the 19 patients had therapeutic concentrations, 5 patients had subtherapeutic concentrations, and one patient was above therapeutic at  $21 \text{ mg/L}$  (mean =  $13 \pm 4.6 \text{ mg/L}$ , target =  $14 \text{ mg/L}$ ).

### LIMITATIONS OF THE CHIOU METHOD

The clinical trials of the Chiou equation described in the literature support its use in quickly estimating drug clearance and making appropriate dosage adjustments to achieve efficacy while avoiding toxicity. The main limitation of the Chiou equation in guiding therapy is that it assumes a one compartment model with linear elimination of the drug.

(Please turn to page 350)



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## DRUG THERAPY REVIEW

(Continued from page 348)

Nonlinear elimination of theophylline has been documented both in individual case reports of adults and in studies of children.<sup>6-9</sup> Suitable precautions must therefore be taken in using the Chiou equation, because a patient with nonlinear elimination will have a higher attained steady state concentration than was calculated: small changes in dose will cause a disproportionate increase in steady state concentration.

A rational strategy for avoiding theophylline toxicity should predict when the theophylline concentration should be monitored as steady state is approached. Too frequent monitoring simply wastes resources, and too infrequent monitoring, of course could lead to toxicity. A conservative approach, based on simple pharmacokinetic principles, that avoids these extremes is outlined.

1. There are conservative limits to the rate of change of theophylline concentration during IV infusion that can be easily calculated.

a. Assuming a one compartment system with no means of elimination (linear or nonlinear), the change in theophylline concentration cannot exceed the infusion rate times the time divided by the volume of distribution ( $k_o \times t/V$ ).

*Example:* A patient received 0.5 mg/(kg · hr) of theophylline. The average distribution volume is 0.5L/kg. In 10 hours the maximum change in concentration would be  $[(0.5 \times 10 \text{ mg/kg})/(0.5\text{L/kg})]$  or 10 mg/L. If the initial concentration were 13 mg/L, the serum concentration would still be less than 23 mg/L 10 hours later.

b. When 2 serum concentrations obtained at different times are available, a better approximation of maximum serum theophylline accumulation could be calculated from the slope defined by these points, since the slope of the concentration versus time curve continuously decreases as steady state is approached.

*Example:* At one hour after the loading dose, the concentration of theophylline was 10 mg/L and 5 hours later the concentration was 15 mg/L: the rate of increase (slope) is  $(15 - 10)/5$  or 1 mg/(L · hr). In another 10 hours, the concentra-

tion can not increase by more than 10 mg/L; and the serum concentration at this time would be less than 25 mg/L (15 mg/L + 10 mg/L).

2. The estimated clearance calculated from the Chiou equation can be used in conjunction with Equation 1 to calculate an estimated concentration at any time during the infusion. Increasing discrepancies of the observed concentration from the predicted concentration could indicate nonlinear elimination. Equation 1 can be rewritten as follows:

$$\text{Equation 4: } C_t = C_o \exp(-k_e \cdot t) + (k_o/CL)(1 - \exp(-k_e \cdot t))$$

$C_t$  = concentration at time  $t$  after last concentration  $C_o$

$C_o$  = last available concentration

$k_e$  =  $CL/V$  where  $V$  is assumed to be 0.5 L/kg  $\times$  (weight in kg)

$k_o$  = the infusion rate

$CL$  = clearance from Chiou equation (Equation 3)

### Example

The clearance ( $CL$ ) from Equation 3 was calculated to be 2.8 L/hr; the last drug concentration ( $C_o$ ) was 15 mg/L, and the infusion rate ( $k_o$ ) is 70 mg/hr. What drug concentration is expected 6 hours after the 15 mg/L point ( $C_t$ )?

Patient weight = 70 kg

$V = 0.5 \text{ L/kg} \times (70 \text{ kg}) = 35 \text{ L}$

$k_e = CL/V = (2.8 \text{ L/hr})/(35\text{L}) = 0.08 \text{ hr}^{-1}$

Calculation:

$$C_{6\text{hr}} = (15 \text{ mg/L})[\exp(-0.08 \times 6)] + \frac{(70 \text{ mg/hr})}{(2.8 \text{ L/hr})}$$

$$[1 - \exp(-0.08 \times 6)] = 18.8 \text{ mg/L}$$

This concentration could be compared with an actual measured concentration. Note that while the Chiou equation itself requires only a simple four-function calculator, the exponential function is needed for these calculations.

### SUMMARY

With suitable precautions, the Chiou equation can be used to individualize the infusion rate of theophylline in a given patient. The necessary steps are summarized as follows:

1. Two concentrations are required after infusion is begun; the time the first sample is drawn should be about one hour after the beginning of the infusion; and the second sample

(Please turn to page 352)



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should be at least 4 hours after the first. Vozeh *et al.*<sup>2</sup> used samples at one and 5 hours in their studies; in the study of Anderson *et al.*,<sup>5</sup> the 2 samples were drawn on the average at 3.6 and 9.4 hours.

2. The Chiou method (Equation 3) is used to calculate the estimated clearance of theophylline assuming a distribution volume of 0.5 L/kg. The infusion rate can then be modified to give the desired steady state concentration (Equation 2). No change in infusion rate may be necessary if the calculated steady state concentration is acceptable.

3. Drug concentrations should be carefully monitored to prevent possible toxicity in patients with nonlinear elimination or changing clearance. A conservative estimate of when to draw a sample can be found with use of one concentration and the infusion rate, or the linear slope from 2 concentrations.

4. When serum concentration is monitored later in the infusion, the predicted and observed concentrations can be compared to see if drug concentration is rising at a faster

rate than expected. After a suitable steady state is reached (4 half-lives gives 94 % of steady state), the theophylline concentration can be routinely monitored once a day. — GEORGE F. JOHNSON, Ph.D., *Department of Pathology.*

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## QUALITY OF CARE IN IOWA NURSING HOMES

**T**HE IOWA OUTCOME ORIENTED SURVEY for intermediate care facilities is conducted by the Iowa Department of Health, Division of Health Facilities. This survey is used to determine whether a facility is in compliance with state and federal regulations.

This article will highlight survey results generated from December 1, 1982 through November 30, 1983. The data were gathered by 20 state surveyors who visited 361 intermedi-

area is defined as having a surrounding population of 25,000 or more people.

When reviewing the flow of residents within intermediate care facilities, one may consider the number of admissions, transfers, discharges and deaths. The survey results indicate that the urban facilities, when compared to rural facilities, consistently have more admissions, transfers, discharges and deaths. A partial explanation may be due to the size factor since larger facilities are present in the urban areas.

Table 1 displays the averages of admissions, transfers, discharges and deaths for the previous full year. The resident flow is broken

TABLE 1  
THE RELATIONSHIPS BETWEEN FACILITY SIZE, AREA AND RESIDENT FLOW

Indicator	State Avg. (360)	Small		Medium		Large	
		Urban (6)	Rural (36)	Urban (33)	Rural (186)	Urban (48)	Rural (51)
Admissions	40.5	33.0	21.3	54.7	31.3	68.0	53.5
Transfers	14.5	18.8	7.6	21.2	10.3	24.4	20.5
Discharges	10.1	11.7	5.1	18.5	7.5	15.0	12.8
Deaths	14.8	2.3	7.9	14.5	12.2	26.0	20.7

ate care facilities. Within each facility, a surveyor randomly selects 10 residents to examine and interview to ascertain various aspects of health care quality provided by the facility.

### RESULTS

On the average, intermediate care facilities have 72 licensed beds. The average occupancy rate for these facilities is 95.3%. The occupancy rate is consistently higher for the rural facilities than for their urban counterparts. An urban

down by size and by urban and rural distinctions. Size is defined as 39 or fewer residents for small facilities, between 40 to 79 residents for medium facilities, and those facilities with 80 or more residents are considered large.

Considering the differences in size, it is observed that the averages of admissions, transfers, discharges and deaths increase as size increases. The differences among these size distinctions are statistically significant for all 4 categories, as would be expected. However, the difference between urban and rural areas are still evident when controlling for the size differences. Urban facilities have more admissions, transfers and discharges than

their rural counterparts within each size category. More deaths are found in the medium and large urban facilities than rural facilities, however, more deaths occurred in the small rural homes (7.9) than the small urban home (2.3).

TABLE 2  
RESIDENT'S FUNCTIONAL HEALTH STATUS

Functional Area	Percentage
Ambulation	39.5%
Confused/Disoriented	46.3%
Eating — Complete Assistance	15.4%
Eating — Partial Assistance	14.9%
Indwelling Catheters	7.6%
Bowel and/or Bladder Retraining	20.0%
Decubiti	3.7%
Bedfast	1.2%
Incontinent	32.7%
Bed to Chair	32.0%
Restraints (II, III)	31.3%

Table 2 presents the percent of residents within each intermediate care facility requiring assistance in selected functional areas. The overall distribution is essentially the same as in previous studies, indicating that the patient profiles remain stable within Iowa nursing homes.

Given the dependency levels of the individual residents, the total staff ratio of nurses and their aides is an average of 2.2 hours per resident per day. In general, the state requirement of 1.7 staff hours per resident is exceeded by Iowa ICFs.

The Outcome Oriented Survey allows each surveyor to review the care plans of the 10 residents within their selected sample. The following table displays the average scores of those care plans which are satisfactory.

As Table 3 indicates, the scores of satisfactory care plan items are in the 50th and 60th percentiles. There are 88.2% of the overall care plans being implemented satisfactorily within Iowa intermediate care facilities.

The state surveyors examine each resident in their selected sample to see whether nursing and personal care services have been provided. For personal care services, the resident is checked to ascertain if they are clean and dressed and have received the proper hair, skin, nail, and oral hygiene care. A high percentage of these services are provided by Iowa facilities with an overall state average of 96.1%.

In addition to the personal care, the surveyors checked the residents in their sample through observation and examination to identify what special services should be provided for each resident. The special care areas include bowel/bladder problems, rehabilitative services, and other special problems. The average amount of these special services being provided is 94.3%.

The Outcome Oriented Survey also measures the quality of life as viewed by the residents within a facility. The surveyor personally interviews each alert resident within the selected sample to ascertain the level of satisfaction a resident experiences with his/her life within that particular facility. The surveyor carries on a conversation and rates the responses obtained from the resident on a scale from 1 to 5 (very dissatisfied to enthusiastic about the facility and the staff, respectively). The surveyor asks the residents about their

TABLE 3  
PERCENT OF SATISFACTORY CARE PLANS

Care Plan Features	State Average
1. Overall Planning	68.6%
2. Component Parts	57.3%
3. Progress Notes	66.8%
4. Assessment/Reassessment Care Plan Reviews	63.6%
5. Overall Care Plans Being Implemented	88.2%

feelings regarding comfort, freedom, staff treatment, safety, food and activities. Combined, these 6 variables are intended to measure quality of life as perceived by the resident. An overall average of 3.7 satisfaction is found within Iowa facilities. This score is situated just under the resident experiencing a good deal of satisfaction with care in the facility.

In summation, the Outcome Oriented Survey measures many aspects of long term care for the intermediate care facilities in Iowa. Some of these areas have been briefly examined within this article. The findings of this survey have shown that an acceptable level of personal and nursing care has been provided by Iowa facilities for their residents. Although the facilities did not perform as well in the planning of health care, nonetheless, a good deal of satisfaction with quality of life in ICFs was found to be experienced according to the residents' viewpoint.



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**Contraindications:** Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum  $K^+$  levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict  $K^+$  intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

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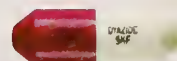


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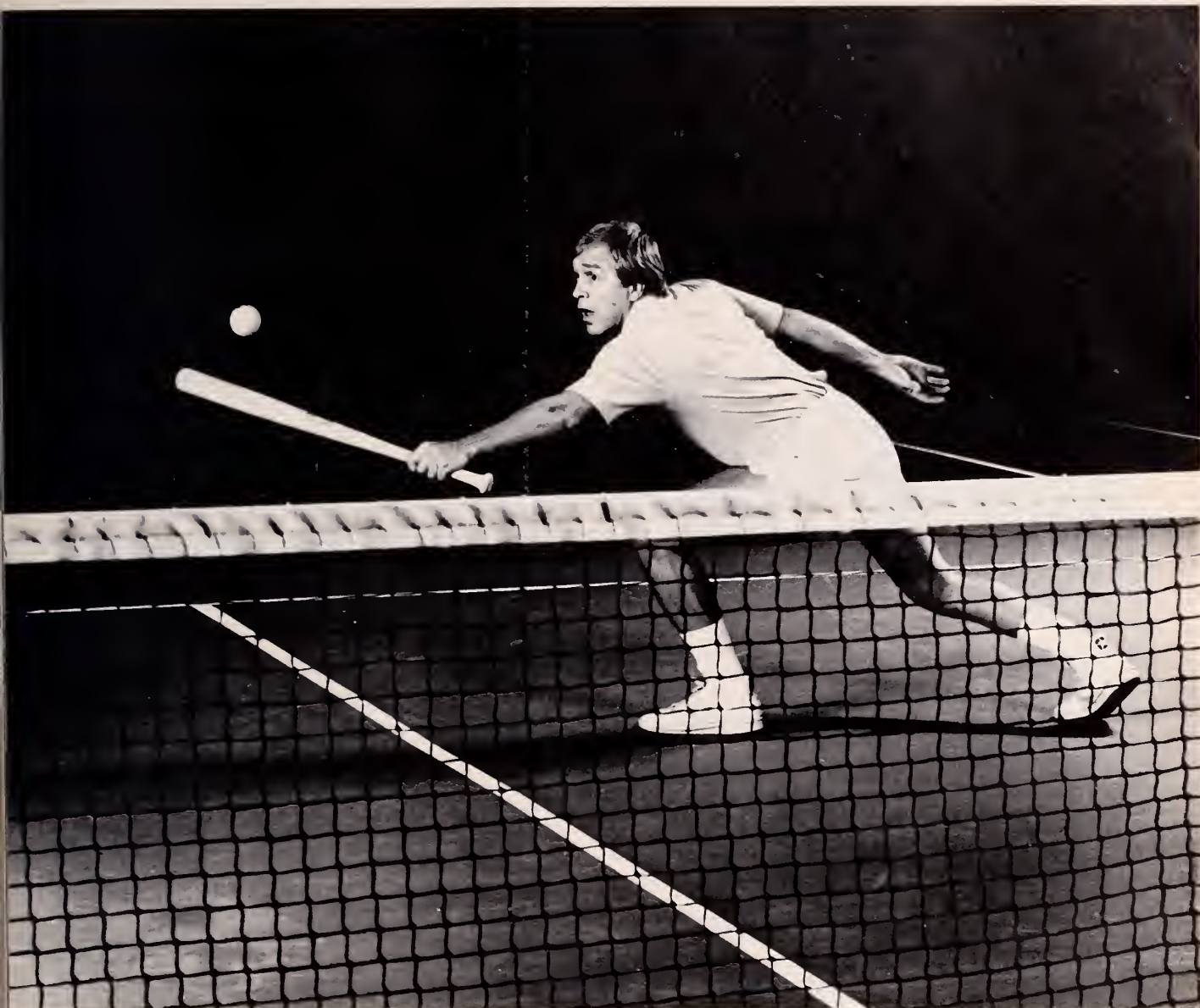
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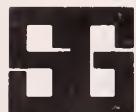
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## June 1984 Morbidity Report

Disease	June 1984 Total	1984 to Date	1983 to Date	Most June Cases Reported From These Counties
Amebiasis	13	39	22	Scattered
Brucellosis	0	1	0	
Chickenpox	451	6379	5456	Scattered
Campylobacter	54	113	114	Scattered
Cytomegalovirus	3	9	8	Jahnsan, Muscatine, Wapella
Eaton's Agent infection	5	21	100	Palk
Encephalitis, viral	3	7	21	Jackson, Lee, Scatt
Erythema infectiosum	15	51	25	Scattered
Gastroenteritis (GIV)	344	8744	8499	Scattered
Giardiasis	20	91	80	Scattered
Hepatitis, A	6	20	17	Scattered
Hepatitis, B	9	51	43	Scattered
Hepatitis, Non A-B	1	11	22	Marian
Hepatitis type unspecified	2	8	7	Buena Vista, Fayette
Herpes Simplex	117	468	489	Scattered
Herpes Zoster	0	2	6	
Histoplasmosis	3	15	12	Dubuque, Palk Pattawattamie
Infectious mononucleosis	7	100	117	Scattered
Influenza, lab confirmed	24	170	107	Scattered
Influenza-like illness (URI)	552	30743	28311	Scattered
Legionellosis	1	1	3	Des Moines
Malaria	0	1	2	
Meningitis aseptic	2	14	28	Clinton, Palk
bacterial	18	63	84	Scattered
meningococcal	2	18	13	Black Hawk, Pattawattamie
Mumps	1	17	35	Wright
Pertussis	0	3	5	
Rabies in animals	14	78	134	Scattered
Reye Syndrome	1	2	1	Palk
Rheumatic Fever	0	0	1	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmonellosis	23	111	106	Scattered
Shigellosis	2	21	17	Plymouth, Wadbury
Tetanus	0	1	0	
Toxic Shock Syndrome	0	9	10	
Tuberculosis total ill	5	34	36	Scattered
bact. pas.	5	28	26	Scattered
Typhoid Fever	0	0	0	
Venereal diseases: Gonorrhea	344	2116	2163	Scattered
Syphilis	0	10	7	

Other Non-Reportable Diseases: Chlamydia — Black Hawk; Ureaplasma  
Urealyticum — 1, Dubuque, 1, Jahnsan, 4 Palk.



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## ABOUT IOWA PHYSICIANS

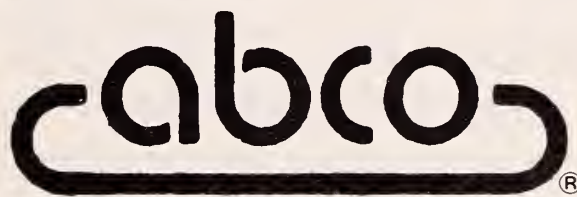


Dr. Ross Valone, Des Moines, recently was elected president of the Charter Community Hospital medical staff. Other officers are Dr. Ronald Shirk, president-elect, and Dr. Lon Brewer, secretary treasurer. . . . Two Iowa City physicians, Dr. Zuhair K. Ballas and Dr. Roger G. Kathol, recently were named fellows of the American College of Physicians. Both are assistant professors in the Department of Internal Medicine at the U. of I. College of Medicine.

Dr. Thomas E. Kiernan, Newton, recently was named to the Board of Directors of the First

National Bank in Newton. . . . Dr. Stanley Levine, Ottumwa, recently closed his pediatric practice in Ottumwa. He has moved to Columbus, Georgia, where he will become chief of pediatrics at The Medical Center. The Center is affiliated with Emory University and the Medical College of Georgia. . . . Dr. John R. Scheibe, Bloomfield, recently was presented a special plaque from the Davis County Hospital personnel and medical staff honoring him for his 32 years of service to the community. Dr. Scheibe also received special emeritus status recognition. . . . Dr. Brian F. McCabe, professor and head of the Department of Otolaryngology at the U. of I. College of Medicine,

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recently was named president-elect of the American Otological Society. . . . **Dr. E. M. Eneboe**, Hawarden, recently was honored at an open house for his many years of service to the Hawarden area. . . . **Dr. Paul A. Berger, Jr.**, Sioux City, recently was elected president of the Iowa Chapter of The American College of Emergency Physicians. Dr. Berger has been practicing emergency medicine for 5 years at St. Luke's Regional Medical Center and Marian Health Center in Sioux City. . . . **Dr. Robert L. Swaney** recently was named president of the Linn County Medical Society; **Dr. Lawrence C. Strathman**, president-elect; **Dr. Mark J. Tyler**, vice-president; and **Dr. Dale Roberson**, secretary-treasurer. All are Cedar Rapids physicians.

**Dr. Katharine Gillis** and **Dr. Paul Bragg**, who were married last October, recently began medical practice in Oelwein. Dr. Gillis received her medical education at St. John's in Newfoundland and Dr. Bragg received his medical education at St. John's in Halifax. Both took postgraduate training at London, Ontario. . . . **Dr. Lawrence V. Larsen**, Harlan physician for 35 years, recently retired from medical practice. **Dr. Steven R. Herwig** recently joined **Dr. Thomas A. Ericson** in the practice of otolaryngology-head and neck surgery. Dr. Herwig received his medical education at the Des Moines College of Osteopathic Medicine and Surgery and completed his residency at the University of Cincinnati. He has served in the United States Air Force since 1981.

## DEATHS

**Dr. George H. Pester**, 63, Council Bluffs, died June 22 at his home. Dr. Pester received the M.D. degree at the University of Nebraska School of Medicine; interned at Methodist Hospital in Indianapolis, Indiana; and served his surgery residency at the University of Nebraska Medical Center. Dr. Pester was a past president of the Pottawattamie County Medical Society; past president of Jennie Edmondson Hospital staff; fellow of the American College of Surgeons and an associate professor of surgery at the University of Nebraska School of Medicine.



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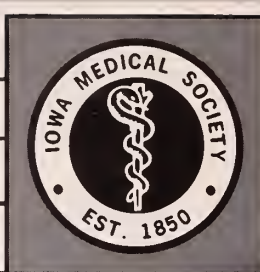
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A Monthly Commentary

## IN THE PUBLIC INTEREST



### Medicare Freeze

**B**ECAUSE PROPORTIONATELY Iowa has more older citizens than most states, developments relating to Medicare are especially important. So we have a particular interest in action taken by Congress in late June.

It produced the Medicare deficit-reduction law which, proponents say, will shave \$6.5 billion off what would have been spent for Medicare services. Of this savings, they project \$2.5 billion will come over three years from a physician fee freeze. The rest will derive mostly from limits on hospital reimbursement, increased Medicare premiums and fee schedules for clinical lab services.

What Iowa physicians face, along with colleagues elsewhere, is a 15-month, rigidly monitored fee freeze. There will be Iowa physicians who sign "participating" agreements with Medicare. And there will be those who do not. Those who do may bill their patients only for the 20% of the allowance not covered by Medicare. The carrot offered "participating" doctors is that of letting them bill Medicare customary charges during the freeze. While their fees will stand frozen, any increase in billed charges will be factored into the customary charge profile. This could be advantageous when the freeze is over, even though the economic index increases in prevailing charges will continue to apply.

Added governmental inducement to physicians choosing "par" status will include listings in directories and toll-free hot lines identifying practitioners in this category; electronic billing of claims where possible; and permission to bill any supplemental insurer the full amount allowed by Medicare, leaving the insurer to collect from Medicare.

Iowa physicians who do not "sign up" may assign Medicare claims on a case-by-case basis. But the government says it will monitor this

activity closely, and no charges in excess of those made during the base period will be recognized when "customary charge profiles" are updated at the end of the freeze.

In short, the new law creates extra problems for physicians who do not "sign up." Conversely, there are obvious incentives to encourage physician participation. To illustrate the penalty potential, a "non-par" physician charging a Medicare beneficiary a fee greater than was charged for that procedure or service in the second quarter of 1984 could be fined and excluded from Medicare until 1989 or later. On the reward side of the slate, the "participating" physician may increase fees any time after having signed the agreement. While the increases would not be collectible for Medicare patients for a year, they will increase physician profiles for higher Medicare payments starting 10/1/85. And they would presumably be collectible from non-Medicare patients and insurers in the normal manner.

In Iowa, Blue Cross/Blue Shield, as Medicare carrier, will be responsible to notify physicians of these provisions, rulings and options. The carrier will have the task of setting up hot lines, compiling directories and implementing direct electronic billing systems.

This new creation of government is called by its critics a bureaucratic monstrosity with the potential for severely damaging the health care system. And while Congress stopped short of requiring all physicians to accept assignment in all Medicare cases they treat, it did impose, through its federal monitoring, enough potential sanctions to make the "non-par" approach risky.

More uncertainty is just ahead for Iowa physicians; still they must remain advocates of the patient at all times.

August 1984

Iowa Medicine





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**Adverse Reactions:** Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

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# IowaMedicine

Journal of the Iowa Medical Society



**Wrestling Weight -  
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See Page 381

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# IowaMedicine

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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**ABOUT THE COVER** — Much interest has been centered on the subject of just how and who should decide on the weight at which a young Iowa wrestler should compete. Research on the topic has been in process for several years with support from the Iowa Medical Foundation, Iowa High School Athletic Association and other sources. On page 381, Charles Tipton, Ph.D., and Robert Oppliger, M.S., report on the progress of this research activity.



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## PRESIDENT'S PRIVILEGE



AS YOUR PRESIDENT, I represented the Iowa Medical Society at the inauguration of Joseph F. Boyle, M.D., as the new president of the American Medical Association. His presidential address is in the August 10 issue of JAMA and is well worth a thoughtful perusal by the physician who is concerned about the future of medical practice in our country.

Dr. Boyle recalled medicine's code of ethics dating back to Hammurabi — "to help the sick, to do no harm, to educate the novice, and to share medical knowledge with fellow physicians." He quoted a 1948 World Medical Association statement, "The health and welfare of patients shall be the first consideration, not allowing economics, politics, race, or religion, or any other circumstance to take preference."

He contrasted this with the business ethic, quoting Uwe Reinhardt, professor of economics at Princeton, who said, "A business ethic is to maximize the return on investment to your shareholders without breaking the law."

He cited a report by Aaron and Schwartz in a book entitled *THE PAINFREE PRESCRIPTION*. This report is an "evaluation of the medical care in Great Britain as compared with the United States."

Dr. Boyle was concerned that economic factors had contributed to standards of care in Great Britain which are significantly inferior to

our standards of care in this country. But his greatest concern was that physicians in Great Britain had been a part of the gradual reduction of the standards of care as they realize that financial restraints make it impossible for them to do their best.

He stressed that society looks to the medical profession, guided by its code of ethics, "to establish, monitor, and maintain standards for their protection."

Government and other payors are concerned about costs. We as physicians can help to control costs, and we will. But only the physician serving the patient can decide what care the patient needs; and only the physician, as Dr. Boyle affirms, can be the advocate for the patient.

Each of us as physicians is a part of the battle that was lost in Great Britain. Let us each continue to do our best to care for our patients. It will not be easy as pressures mount, but we have all read the old slogan, WHEN THE GOING GETS TOUGH, THE TOUGH GET GOING. As physicians, we can do no less.

John Tyrrell, MD

John E. Tyrrell, M.D.  
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# Physician Reimbursement Under Medicare

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*Reimbursement for services provided Medicare beneficiaries is changed significantly by the federal "Deficit Reduction Act of 1984." Iowa physicians need to know as much as possible about this as they contemplate what position they will take. These questions and answers are taken from material prepared by the American Medical Association. They represent a good overview.*

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## What is the Deficit Reduction Act of 1984?

The Deficit Reduction Act of 1984 is the name for a federal law, P.L. 98-369, enacted on July 18, 1984, that contains over 300 provisions designed to reduce federal expenditures by over \$50 billion and act as a "down payment" on the federal deficit. This Act contains over 60 changes to the Medicare and Medicaid programs, including several directly relating to physician reimbursement for services provided Medicare beneficiaries. *This document is limited to a discussion of Medicare provisions relating to the fee and reimbursement freeze and "participation" agreements.*

## In a general way, how has this new law changed Medicare reimbursement?

(a) Two classes of physicians have been created: "participating physicians" and other physicians (hereinafter referred to as "non-participating physicians");

(b) Medicare reimbursement levels for physician services have been frozen from July 1, 1984, to September 30, 1985;

(c) Fee increases by "non-participating physicians" above a specified level are pro-

hibited during this 15-month period. Violations of this fee freeze are subject to severe penalties; and

(d) Certain incentives are provided to encourage physicians to sign participation agreements.

## Does the law apply for physician services to all patients?

No. The federal reimbursement and fee freeze limitations apply only to services provided Medicare beneficiaries.

## Do the new provisions relating to the freeze and participation agreements require a change in the way a physician conducts his or her Medicare practice?

No. The physician now has an *option* to sign or not sign a participation agreement.

(a) A "participating physician" must accept assignment for all claims for all Medicare patients.

(b) A "non-participating physician" can continue to treat Medicare patients, accepting assignments or not on a claim-by-claim basis as in the past. Only under this option can the "direct billing" method be continued.

## How does the Medicare reimbursement freeze work?

Under the Medicare program, physicians are paid at the *lowest* of:

- their "actual charge" (the amount the physician bills for the service);
- their "customary charge" for the service provided; or
- the "prevailing charge" in the community for the service provided.

This lowest amount is called the "reasonable

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## PHYSICIAN REIMBURSEMENT UNDER MEDICARE

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charge." By law, Medicare pays 80%; the beneficiary is obligated to pay the balance.

The "*customary charge*" is determined through development of a fee profile for each individual physician, and a median figure is determined for each procedure. This median figure is the individual physician's "*customary charge*."

Reimbursement by Medicare, whether for the "*actual*" or the "*customary charge*" of the physician, is not allowed to the extent that it exceeds the "*prevailing charge*" level established in the community. The "*prevailing charge*" is figured by arraying the "*customary charges*" for all physicians in the community and is then set at the 75th percentile of these charges as weighted by frequency.

In addition, since 1975 the prevailing rate (as determined for that year) has been allowed to rise in each subsequent year only in accordance with an "*economic index*" set annually by the Secretary of the Department of Health and Human Services (HHS), who has overall responsibility for the Medicare program.

Under the new law, the *prevailing charge* levels recognized by the Medicare program will be frozen until October 1, 1985, at the level recognized for the period of July 1, 1983 through June 30, 1984. The *customary charge* levels for "participating physicians" and "non-participating physicians" will be frozen until October 1, 1985, when these two categories of physicians will be treated differently in the up-grading of customary charge profiles. (See question No. 8)

### What are the dates of the freeze period?

July 1, 1984, to September 30, 1985.

### What is the significance of the dates used for framing the physician reimbursement and freeze period?

Prior to the enactment of this new law, physicians' customary charge levels recognized by Medicare were increased July 1 each year. At that time, each physician's customary charge levels would be adjusted and the Medicare economic index would also be applied to

the prevailing charge levels. (If the economic index had been applied on July 1, 1984, the Medicare program would have allowed the prevailing charge level to increase by 3.34%.) Under the new law, instead of updates being made July 1 each year, future fee screen years will run from October 1 to September 30. Thus the next adjustment in both the customary and prevailing charge rates will be October 1, 1985. (The law also modified the time frame used for determining customary charge profiles. Updates made on October 1 for customary charge profiles will be based on charges made during the preceding 12-month period running from April 1 to March 31.)

### At the end of the freeze period, will physician charge profiles and reimbursement be allowed to catch up with the increases that would have been allowed July 1, 1984, and July 1, 1985?

The new law only allows for a catch-up in physicians' charges in one respect. The Health Care Financing Administration (HCFA) will recognize a full increase for the *customary charge* levels for "participating physicians" on October 1, 1985, based on normal increases in their fees during the freeze period.

In determining the *customary charge* profile for "non-participating physicians" for the annual periods beginning on October 1, 1985, and October 1, 1986, HCFA will not recognize any increases in actual charges for services furnished during the freeze period that are above the level of actual charges in the period of April, May and June, 1984.

Medicare reimbursement cannot exceed the *prevailing charge* level in the community, and in determining the prevailing charge level for years beginning October 1, 1985, HCFA will not allow for the increases that normally would have been made July 1, 1984, and 1985.

### The new law creates a category of physician under Medicare called the "participating physician." What is a "participating physician?"

A "participating physician" is a physician who agrees to accept *all* Medicare claims on an assigned basis for a full year. Once a physician signs a participation agreement (which must be before October 1 of each year), he or she will be obligated to accept assignment for all Medi-



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## PHYSICIAN REIMBURSEMENT UNDER MEDICARE

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care claims from October 1 of that year to the following September 30. Physicians will have an annual opportunity to elect to become a "participating physician."

Newly-licensed physicians and physicians who move to a new area will be allowed to enter into a participation agreement for the remainder of the year.

The participation agreement will be made available to physicians by the local Medicare carrier.

### **What are the incentives to be a "participating physician?"**

"Participating physicians" will be allowed a full increase in their customary charge profile for the year beginning on October 1, 1985. During the 15-month freeze, "participating physicians" will be able to *bill* for normal increases in their fees, but their actual reimbursement will be limited to the Medicare-allowed amount by virtue of the acceptance of assignment for all claims. The ability to include normal increases in their bills will enable "participating physicians" to increase their customary charge profiles for an increased Medicare reimbursement when the freeze on customary and prevailing charge levels ends. (However, this increase in the customary charge profile would not allow an actual increase in Medicare reimbursement when the freeze ends if the physician's *customary charge* level exceeds the *prevailing charge* level at that time.)

"Participating physicians" will be listed in a directory containing their name, address and specialty.

Each Medicare carrier will be required to maintain a toll-free telephone number where Medicare beneficiaries will be able to obtain the names, addresses, specialty and telephone numbers of "participating physicians."

Where a Medicare carrier has the capability of receiving electronic transmission of bills for Medicare services, the physician will have this system available for submitting bills to the carrier.

"Participating physicians" may (if the Secretary exercises this option) be provided

with a certificate or other type of emblem that they will be able to display to enable beneficiaries to have an easy means of identifying them.

Where Medicare beneficiaries have supplemental medical insurance (commonly called "Medigap" coverage), the physician will be able to bill the supplemental insurance carrier directly for the entire Medicare-approved amount. The Medigap insurance carrier will pay the physician both the Medicare and Medigap portions and subsequently receive the Medicare portion directly from the Medicare carrier.

### **Will the "participating physician" program be phased-out along with the scheduled end of the Medicare reimbursement freeze?**

No. Physicians will be given an annual opportunity to enter into a participation agreement. This feature of the new law extends indefinitely, while the reimbursement and fee freeze limitations are of 15-month duration.

### **Can "non-participating physicians" still provide care for Medicare beneficiaries?**

Yes. "Non-participating physicians" may continue to treat Medicare beneficiaries. However these physicians are prohibited during the freeze period from increasing their actual charges to Medicare beneficiaries above the actual charges made during the base period of April, May and June, 1984.

### **Can "Non-participating physicians" submit claims on an assigned basis?**

Yes. "Non-participating physicians" will be allowed to continue making assignment decisions on a claim-by-claim basis.

### **Will assignment information on "non-participating physicians" be available to the public?**

Yes. All physicians who accept assignment on a certain percentage basis or who provide at least a minimum volume of services for Medicare beneficiaries (as determined by the Secretary of HHS), will have their individual assignment information published in a list that will contain their name, address, specialty, and the percent of claims accepted on an assigned basis. These listings will be organized by geo-



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## PHYSICIAN REIMBURSEMENT UNDER MEDICARE

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graphical area, and they will be made available to Medicare beneficiaries.

**Can a "non-participating physician" continue the past practice where a physician could bill the program beneficiary for an amount in excess of the Medicare approved amount?**

Yes. However, the Deficit Reduction Act does set limits on the maximum amount the "non-participating physician" may bill a program beneficiary. "Non-participating physicians" will not be able to bill Medicare beneficiaries an amount in excess of their actual charges for the base period fixed in the law: April, May and June, 1984. This limitation on actual charges is to be in effect from July 1, 1984, to September 30, 1985.

**How will the federal government set the maximum amount that "non-participating physicians" may charge Medicare beneficiaries during the 15-month limitation period?**

The federal government has yet to announce the methodology to identify the maximum amount that will be recognized as the physician's actual charges made during the period of April, May and June, 1984. Once set, this amount will serve as the maximum amount a "non-participating physician" may charge for services to a Medicare beneficiary during the freeze period.

**What will be the maximum amount for services a "non-participating physician" can charge in instances where there is no base period charge data to set the limitation?**

The Health Care Financing Administration has yet to announce how this level will be set.

**Will penalties be imposed where "non-participating physicians" raise their fees for services provided to Medicare beneficiaries during the "fee freeze" period? If so, what are they?**

Yes.

The penalties may be monetary (in the form of penalties or assessments) or suspension from the Medicare program, or both.

In situations where "non-participating physicians" "knowingly and willfully" bill Medicare beneficiaries an amount in excess of their actual charge as set by charges made during the base period of April, May and June, 1984, the Inspector General of HHS will have the authority to impose a civil monetary penalty and assessments against the physician. These penalties may be up to \$2,000 for each instance of excess charges, and the physician will also be subject to an assessment of up to twice the amount billed above the maximum allowable charge as determined from the base period of April, May and June, 1984. Physicians who violate this maximum charge level may also be subject to suspension from participation in the Medicare program for a period of up to five years. The law does make an exception to the suspension provision for physicians who are the sole source of physician services or of essential specialized services in a community. (The Secretary may use the monies collected for the purpose of making "restitution" to patients for excess charges.)

**Given the penalties that can be imposed on "non-participating physicians," why would a physician choose not to be a "participating physician?"**

In making a participation election, physicians will have to consider the economic ramifications of being a "participating physician," and the fact that "participating physicians" will be prohibited from collecting any amount in excess of the Medicare-allowed amount. "Non-participating physicians" will be allowed to bill and collect their usual fees from Medicare beneficiaries, as long as they don't violate the prohibition against fee increases.

**What reimbursement factors should a physician take into account in entering or not entering into a participation agreement?**

One element that physicians should consider is the amount of reimbursement for a service provided to a Medicare beneficiary. The amount Medicare reimburses remains subject to the three tests identified in question No. 5, and a "participating physician" will receive no more than the prevailing charge allowed for the service. On the other hand, a "non-participating physician" will be allowed to con-

*(Please turn to page 376)*



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tinue to bill his or her usual fees to Medicare beneficiaries and receive such amounts, even though these fees may be in excess of the prevailing charge level. (Where an assignment is not taken, the physician may collect full payment from the patient, who in turn receives the Medicare payment — 80% of the Medicare-allowed amount — from the Medicare carrier.)

Physicians should contact their Medicare carrier and be knowledgeable concerning the customary and prevailing charge levels for the services they routinely provide. This information may also be used as a basis for comparison with charges made by the physician during the base period of April, May and June, 1984. Where a physician's actual or customary charges are in excess of the prevailing charge limits, the physician may receive less revenue by becoming a "participating physician," since reimbursement will be limited to the Medicare-allowed amount. This loss of income resulting from not being able to collect the full usual charge made to patients may not be offset by a potential increase in future customary charge profiles for the periods beginning on October 1, 1985 and 1986, as customary charges are not allowed where they exceed the prevailing charge level. Where the prevailing charge level exceeds the amount that a physician generally bills for his or her services, it may be to that physician's advantage to become a "participating physician."

The full effect of becoming a "participating physician" must be analyzed on an individual basis by each physician. Physicians traditionally have given special consideration to individual cases of financial hardship in considering arrangements for reimbursement for services.

### **How will physicians be informed of developments in the implementation of the Deficit Reduction Act?**

This Act authorized additional funds for the Medicare carriers to enable them to provide information to physicians concerning this provision of the Deficit Reduction Act. Currently, the Medicare carriers are expected to communicate with physicians through two direct mailings: one informing physicians about the provisions of the law, and another forwarding a participation agreement form.



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Jackson D. Ver Steeg, M.D.

## QUESTIONS AND ANSWERS



### '84 ELECTION COUNTDOWN

*Interest in the November elections is gaining momentum each day. Here are comments on the subject from Jackson D. Ver Steeg, M.D. Dr. Ver Steeg is chairman, Board of Directors, Iowa Medical Political Action Committee (IMPAC).*

**The 1984 General Election will occur November 6. What's at stake?**

This year Iowans will elect a U.S. Senator; 6 Congressmen; 25 state Senators; 100 state Representatives and numerous local officials. And of course, there's the selection of a President, which could influence all these elections.

**What is the import of all this for Iowa physicians?**

The future of Iowa medicine is indeed at stake. Let's face it, the cost of health care is foremost in the public's mind. This interest is reflected in the U.S. Congress and Iowa General Assembly. For example, an interim study committee of the Iowa General Assembly is looking at the question of health care costs right now. This will likely result in the introduction of more legislation aimed at curbing costs in 1985. Everyone has their own ideas on how to structure the health care delivery system. The important thing right now is for physicians to make sure lawmakers hear their ideas too.

**How does IMPAC help in this regard?**

IMPAC helps by assisting in the election efforts of those candidates willing to listen to the views of Iowa physicians. This year IMPAC is taking a more sophisticated approach

to determining who those candidates are. Physicians throughout the state have been asked to meet formally with each nominee to discuss his or her background, philosophical outlook and position on issues of concern to Iowa physicians. The results of these meetings have been very helpful to the IMPAC Board of Directors. Physicians are also being asked to discuss the issues with candidates when IMPAC contributions are delivered. This activity not only helps to provide potential lawmakers with needed information on medical issues; it also serves to increase the number of physicians involved in the political process early on when it counts most, before the election!

**What role can the individual physician play in the upcoming election?**

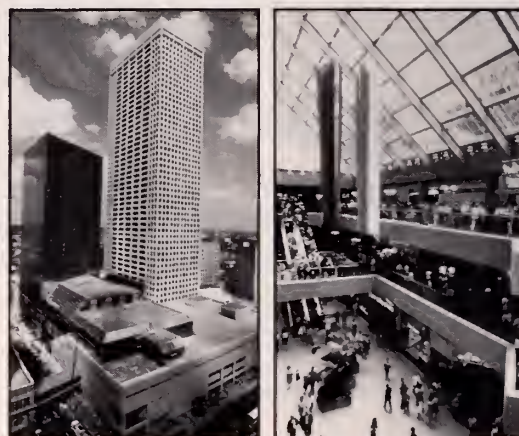
As I just indicated, many physicians have already helped determine which candidate should be supported by IMPAC. But regardless of IMPAC support, physicians should do all they can to support the candidate of their choice. Support can be provided in a number of ways. Physicians and members of their families can and should provide financial and volunteer support for the candidate of their choice. By hosting a coffee or wine and cheese party, a physician's family can help the candidate raise money as well as meet potential voters. Support can also be expressed as simply as wearing a campaign button or allowing the placement of a candidate's campaign sign in the yard.

**How can physicians find out more about getting involved in the political process?**

Meredith Olson and Tim Gibson of the IMS staff are both available to assist interested physicians. The IMS has also prepared a booklet entitled, "A Guide to Political and Legislative Activism." All physicians need to do is contact Ms. Olson or Mr. Gibson.

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**For more information about this valuable educational seminar, contact Isabelle Green, R.N. at (517) 787-1600 extension 291.**



# The Iowa Wrestling Study: Lessons for Physicians

CHARLES M. TIPTON, Ph.D., and

ROBERT A. OPPLIGER, M.S.

Iowa City, Iowa

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*The goal is to provide the safest and most rewarding set of circumstances for young Iowa wrestlers. Research to achieve this goal continues with respect to weight determination. For a number of years the Iowa Medical Society and Iowa Medical Foundation have helped support the research of the authors. It appears now that a definitive, scientifically-generated formula for establishing weight levels is coming into view.*

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IN 1967, the Muscatine County Medical Society recommended to the Muscatine Public Schools that competitive wrestling be abolished because of health hazards associated with the "making of weight."<sup>39</sup> Since that time, the Iowa High School Athletic Association, the Iowa Medical Society and the NCAA Research Committee have encouraged, financed and endorsed a myriad of wrestling

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The authors are associated with the Departments of Exercise Science and Physical Education and Physical Education and Dance, University of Iowa, Iowa City, Iowa. Dr. Tipton has recently accepted appointment as professor and head of the Department of Physical Education at the University of Arizona.

research projects that are identified as the Iowa Wrestling Study.<sup>35, 38, 40, 43, 44</sup> This article will summarize our findings through the 1984 state wrestling championships. We will also highlight the results to aid physicians as they deal with the medical issues associated with the "making of weight."

Despite the progress made since 1967 in minimizing the health hazards associated with wrestling, many problems persist. This point is demonstrated by position statements on the consequences of making weight prepared by the American College of Sports Medicine,<sup>5</sup> American Medical Association,<sup>3, 4</sup> the Pennsylvania State High School Athletic Association,<sup>42</sup> by the sub-committee on wrestling of the California High School Athletic Association,<sup>33</sup> and by the numerous sports medicine conferences conducted in California, Illinois, Iowa, New York, Ohio, Virginia, Wisconsin, etc., which have repeatedly addressed the problems associated with the making of weight by scholastic and collegiate athletes.

However, the fact still remains, wrestlers in Iowa and elsewhere continue to lose a high percentage of their body in a brief period of time before competition.<sup>2, 8, 12, 13, 16, 18, 28, 38, 42, 43</sup> Few educational and medical authorities realize the youngest wrestlers are the ones who lose the highest percentage of body weight to become certified.<sup>38</sup> It is of interest that when assessments of emotional stability were made during a wrestling season, the greatest declines were noted in the individuals within the 98-119 pound weight classes.<sup>12</sup>

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT  
SCIENTIFIC PRESENTATION FOR THE MONTH OF SEPTEMBER 1984

TABLE I  
CALCULATED MINIMAL CALORIC REQUIREMENTS OF SCHOLASTIC  
WRESTLERS BETWEEN 15 AND 16 YEARS OF AGE

Body Weight (Pounds)	Height (Inches)	Minimal Caloric Needs for 24 Hours
98	62.6	1544
115	65.7	1728
130	67.5	1824
145	68.1	1952
155	70.2	2017
175	70.8	2100

Table prepared from data collected at state finals<sup>35</sup> using the equations described in reference 5.

TABLE II  
FAT PERCENTAGES OF SCHOLASTIC AND COLLEGIATE WRESTLERS  
BEFORE CERTIFICATION AND BEFORE THEIR FIRST COMPETITIVE  
MEET

Group	N	Age (Years)	Weight (Pounds)	Density (grams/ml)	Fat (%)
Scholastic Wrestlers	89	16.3 ± 1.0	141 ± 22.7	1.076 ± 0.012	10.6 ± 4.7
Collegiate Wrestlers	41	20.9 ± 1.9	164 ± 28.2	1.079 ± 0.013	9.3 ± 5.0

Values are means and standard errors. Fat percentages determined by hydrostatic methods.<sup>7</sup> The time interval ranged from 14-135 days.

These individuals were also the youngest subjects in the study. While the significance or importance of this observation is unknown, it does reaffirm that younger wrestlers need to be monitored closely during a competitive season.

Not unexpectedly, wrestlers make weight by a combination of food restriction, fluid deprivation and thermal hydration.<sup>12, 16, 38</sup> Of these approaches, dehydration is the method used most frequently and intensely by wrestlers.<sup>38</sup> The interactions between these approaches are complex and cannot be explained by a simple cause and effect relationship. For example, Consolazio *et al* demonstrated in adults that 24 hours of food deprivation with an adequate fluid intake resulted in a body water loss of more than a liter.<sup>9</sup> The complexity of the issue was also shown by Grande<sup>14</sup> who reported that subjects receiving 1010 kcl a day lost more body water and less body fat when receiving 900 ml of fluid per day

than subjects consuming the same number of calories, but drinking 1800 ml of water per day.

Although data from collegiate wrestlers are lacking, high school wrestlers seldom consult their parents or their physicians on "how to make weight." Only in 30% of the cases do they seek the advice of the coach, hence, the peer wrestler becomes the most important source of scientific information on this process.<sup>38</sup> The concept that scholastic and collegiate wrestlers can consume a 500 kcl a day diet to reduce should be discarded because wrestlers expend from 7-15 kcl/min when "working out" and our calculations show that the daily minimum number of calories needed by 15-16 year-old wrestlers will range from 1500 kcl to 2100 kcl depending upon the age, height and weight of the wrestler (Table I).

It is our experience that the majority of wrestlers easily identify fat as being a component of body weight; but very few understand the meaning of lean body mass, or can explain what is meant by essential lipids, or know the significance of the various fluid compartments in the body. Contrary to general impressions, most wrestlers do not possess a high percentage of body fat several weeks before the season

TABLE III  
SUMMARY OF THE EFFECTS OF THE SINGLE AND COMBINED  
INFLUENCES OF FOOD RESTRICTION, FLUID DEPRIVATION AND  
THERMAL DEHYDRATION ON SELECT PARAMETERS

Parameters	Effect
A. Performance	
1. Maximal oxygen consumption	Reduced
2. Muscular strength	Unclear
3. Muscular endurance	Reduced
4. Speed of movement	Unclear
5. Run time to exhaustion	Shorter
6. Work performed	Less
B. Cardiovascular regulation	
1. Cardiac output	Decreased
2. Blood volume	Reduced
3. Plasma volume	Reduced
4. Heart rate	Increased
5. Stroke volume	Reduced
6. Resting blood pressure	No change
C. Temperature and fluid regulation	
1. Rectal temperature	Increased
2. Sweat rate	Decreased
3. Plasma Osmolarity	Increased
4. Muscle water	Decreased
5. Muscle electrolytes	Decreased

These conclusions have been obtained from references.<sup>2, 5, 6, 8, 10, 11, 13, 15-19, 21-24, 28-32, 34, 36-38, 41-44</sup>



TABLE IV  
URINARY PROFILES OF WRESTLERS

A) During The State Tournament of Scholastic Wrestlers				
Parameter	Units	Initial Day	Second Day	Final Day
Osmolarity	mOsmols/L	1069 ± 135 (136)	1051 ± 133 (111)	1124 ± 154 (98)
pH	-log H <sup>+</sup>	6.27 ± 0.78 (136)	5.97 ± 0.79 (111)	5.57 ± 0.41 (97)
Specific Gravity		1.028 ± 0.005 (108)	1.028 ± 0.005 (69)	1.027 ± 0.006 (68)
Na	Meg/L	128 ± 68 (135)	110 ± 55 (111)	96 ± 44 (98)
K	Meg/L	138 ± 51 (135)	111 ± 48 (111)	59 ± 26 (98)
B) Before Competition by Collegiate Wrestlers				
Parameter	Units	Day Before Competition	Day of Competition	
24-Hour Volume	ml	816 ± 188 (7)	755 ± 325 (6)	
Specific Gravity		1.025 ± 0.002 (8)	1.029 ± 0.002 (7)	
pH	-log H <sup>+</sup>	6.13 ± 0.17 (8)	5.84 ± 0.18 (7)	
Osmolarity	mOsmols/L	865 ± 75 (8)	959 ± 47 (7)	
Na	meg/L/24 hr	87 ± 13 (7)	69 ± 30 (6)	
K	meg/L/24 hr	59 ± 17 (7)	50 ± 8 (6)	
Creatinine	mg/24 hr	1359 ± 267 (7)	1629 ± 409 (6)	
LAP	Units 24 hrs	23 ± 5 (12)	50 ± 15 (11)	

Values are means and SE, the number of subjects is in parentheses, data obtained from reference 36, 43, 44.

starts (Table II). Because of long traditions and continued practices, second-string wrestlers will invariably lose weight to try to become a starter at a different weight class. As most wrestling fans know, very few "nonstarters" will ever move up to a heavier weight class. However, this practice of trying to compete at a lower weight class creates serious problems for the sport, the participants, the state athletic associations and the physicians, because it results in a situation where a large number of wrestlers are certified for a small number of weight classes.<sup>40</sup> We used records from approximately 9,000 certified wrestlers and found that 57% of them were in the weight classes between 112 and 138 pounds with 40% of the total being located between 119 and 132 pounds.<sup>40</sup> Thus, new procedures and approaches will have to emerge to obtain a better distribution of weight classes. Some possibilities are to have more classes with either 6 or 10 pound intervals and/or more wrestlers per given weight class.<sup>40</sup> Until this issue is addressed, the practice of bumping will continue on nearly every wrestling team.

Unfortunately, exercise scientists and physicians have had limited success in educating coaches and their wrestlers on the biochemical and physiological effects of food deprivation, fluid restriction and dehydration, on performance (Table III). This situation is due in part to the type of tests designated to approximate the

condition of wrestling and to the differences in experimental designs, methods and subjects used by the various investigators to secure this type of information. However, if one examines the changes in oxygen consumption, muscular strength, muscular endurance, blood volume, cardiac output, heart rate, stroke volume, rectal temperature, etc., that occur with the single or combined methods to "make weight," it is unequivocal that performance will be impaired (Table III). Because of the widespread practices of these various approaches, it is difficult to determine whether a wrestler is victorious because of his athletic ability or because he is better able to withstand the biochemical insults. One fact is certain, individuals cannot increase their tolerance to fluid deprivation by repeated experiences.<sup>1, 13, 29</sup>

In the last decade biopsies have been secured from muscles of numerous athletes to learn more about their energy requirements and their fiber type involvements.<sup>10, 18, 19</sup> When this approach was employed with wrestlers who lost 8% of their body weight, muscle glycogen levels decreased by 30% during the first day, and by 55% at the end of the third day.<sup>18</sup> Interestingly, muscle glycogen levels were still below initial values 3 hours after the study was terminated. This finding indicates more time is needed after weigh-ins or at tournaments for muscle energy stores to be returned to pre-experimental conditions.

TABLE V  
URINARY PROFILES OF WRESTLERS BEFORE CERTIFICATION OR THEIR FIRST COMPETITION MEET

	N	pH ( - LOG H <sup>+</sup> )	Specific Gravity	Osmolarity (mOsmols/L)
High school wrestlers	11	5.73 ± 0.18	1.024 ± .001	936 ± 49
College wrestlers	25	5.67 ± 0.08	1.029 ± .001	968 ± 47
University wrestlers	19	5.86 ± 0.10	1.030 ± .001	980 ± 69

Means and standard errors are shown.

It is well accepted that outstanding wrestlers will make weight 20-30 times each season. Hence, it is likely they will repeat this process 200 times in their careers. One structure that could be affected by the practice is the kidney. The chronic effects of fluid deprivation and dehydration on the anatomy and physiology of the kidney in animals or humans are not well-known. It has been reported that renal blood flow and glomerular filtration rates are decreased by dehydration.<sup>27, 36, 37</sup> Since many wrestlers combine exercise with thermal dehydration while wearing rubber suits,<sup>40</sup> the functioning of their temperature<sup>26</sup> regulating and/or water balance systems are at a considerable risk of being impaired.<sup>13, 30</sup>

In our early studies on the urinary profiles of wrestlers before and after weigh-ins and during the tournament, we found signs of dehydration (high specific gravity, high osmolarity, low pH) before the weigh-in, after the weigh-in, before their first match and during the competition<sup>36, 43, 44</sup> (Table IV). Because of the increases in urinary potassium and leucine-amino-peptidase levels, we speculated the dehydration process had caused renal ischemia.<sup>36, 43</sup> This speculation has yet to be proven or disproven, but the possibility is of sufficient importance for exercise scientists and clinicians to study kidney functions in current and former wrestlers.

Urinary tests are routine in many laboratories; hence, there has been a movement by certain clinicians to use a specific gravity value to assess the degree of dehydration by wrestlers.<sup>30, 33</sup> One suggestion is under consideration to disqualify wrestlers if they have a urinary specific gravity higher than 1.015 at the time of weigh-in. Recently, we measured the resting urines of wrestlers obtained two-three weeks either before certification or competition (Table V) and found values that were signifi-

cantly higher than expected. Consequently, we believe more research is necessary before any group, conference or state organization accepts the 1.015 value as the "cut off" limit. However, statements on the deleterious physiological effects of dehydration are warranted because it has been shown that decreases in cardiac output, stroke volume, and blood volume occur with this practice<sup>2, 8, 26, 29, 30, 32</sup> (Table III). To minimize the consequences of dehydration, many coaches, exercise scientists and physicians favor weigh-ins immediately prior to the match. The rationale being that the dehydrated wrestler would suffer an "object lesson" in performance because of insufficient time for rehydration to occur.<sup>36</sup> This approach may emerge as the most effective method to reduce dehydration before competition because to date education has not.

For more than 15 years we have been developing a scientific method that can be used in schools to predict a minimal wrestling weight before the season commences.<sup>36, 39</sup> Using information from various sources, we have proposed that a minimal wrestling weight be established as one that has five-percent fat.<sup>35-37</sup> In studies conducted at the 1983 and 1984 state tournaments, we found a considerable number of finalists had fat percentages lower than this minimal limit (Table VI). This finding is disturbing because it is possible the number of individuals with low fat percentages may be higher in certain weight classes and because we do not know the consequences of this low fat percentage on growth and development.<sup>25, 35</sup> In a study conducted several years ago on certified high school wrestlers,<sup>35</sup> we found growth trends which suggested many students were not increasing in stature as expected. Whether this impression is correct will require more research, but certainly the observation should not be ignored when we



TABLE VI  
FAT PERCENTAGES OF FINALISTS DURING THE 1983 AND 1984  
STATE TOURNAMENT

Range of Fat Percentages	N	Body Weight in Pounds
3% or less	5	135.0 $\pm$ 9.7
3-5%	5	135.6 $\pm$ 7.0
5-7%	10	132.9 $\pm$ 6.3
7-10%	4	124.6 $\pm$ 9.3
10-14%	11	132.9 $\pm$ 6.9
15% or higher	0	

The mean value for these wrestlers was 7.70  $\pm$  0.76%. Means and SE are listed.

examine the total impact of "making weight."

Associated with the hydrostatic weighing<sup>7</sup> of wrestlers to determine fat percentages have been measurements of skin folds and body dimensions.<sup>35</sup> Our goal is to validate a prediction equation using the best statistical combination of the two approaches. Our results in 1983 and 1984 show promise (Tables VII & VIII), and in 1985 we expect to have available a validated and "practical" prediction equation which could be used in Iowa for scholastic wrestlers. From our information to date, it is clear that the existing Tchong-Tipton equation<sup>35</sup> needs modification before it can be used with collegiate wrestlers (Table VIII).

As noted earlier, the health problems associated with the making of weight are not unique to Iowa. With the assistance of a research grant from the National Collegiate Athletic Association, we have been able to establish a computer operated data bank at Illinois State University for body compositional measurement of scholastic and collegiate wrestlers from Iowa, Illinois, Minnesota, Nebraska and Ohio. The purpose of the data bank is to collect, evaluate and combine results so we will have more scientific information available for prediction equations on body fat percentages, body weight changes, urinary profiles, etc. To date this group has had standardization conferences, laboratory testing sessions and discussions on how to improve the scientific understanding of a minimal wrestling weight. We believe with this type of information, it will be possible to predict a minimal wrestling weight before the season starts that will allow for normal growth and development. With such a method the lowest weight class permissible will be known and scientific ways to implement the weight

TABLE VII  
CORRELATION COEFFICIENTS (r) BETWEEN MINIMAL BODY  
WEIGHTS (5% FAT) AS DETERMINED BY HYDROSTATIC WEIGHINGS,  
SKIN FOLDS, OR BODY DIMENSIONS

Comparisons	N	r
A. High school students	124	
Hydrostatic weighings and skin folds		0.961
Hydrostatic weighings and body dimensions		0.917
Skin folds and body dimensions		0.935
Comparisons		
B. Collegiate wrestlers	41	
Hydrostatic weighings and skin folds		0.984
Hydrostatic weighings and body dimensions		0.880
Skin folds and body dimensions		0.870

TABLE VIII  
COMPARISONS OF A MINIMAL WRESTLING WEIGHT (5% FAT) FOR  
SCHOLASTIC AND COLLEGIATE WRESTLERS

Group	N	Hydrostatic Method	Skin Fold Method	Body Dimension Method
Scholastic wrestlers	124	132 $\pm$ 21	133 $\pm$ 20	132 $\pm$ 19
Collegiate wrestlers	41	156 $\pm$ 24	153 $\pm$ 2	148 $\pm$ 22

Means and standard deviations are shown. The skin fold equation is chest fold (mm)  $\times$  0.148 + subscapular fold (mm)  $\times$  0.075 + tricep fold (mm)  $\times$  0.077 + supro-iliac fold (mm)  $\times$  0.160 + abdominal fold (mm)  $\times$  0.152 + thigh fold (mm)  $\times$  0.102 = total fat percentage.

reduction process can be supervised. Since no prediction system will be error-free, wrestlers could appeal their minimal weight values before a judication board consisting of a physician, exercise scientist and coach. Such a board is currently in existence in a small county in Maryland and the system appears to be functioning quite well.

There are many lessons in the Iowa Wrestling Study for parents, coaches, scientists, and physicians. However, the foremost one is that research on wrestling must be continued if wrestlers are to compete at their maximum biochemical, biomechanical, physiological and psychological levels while educationally benefiting from their athletic experiences.

#### References

The references noted in this paper are available on request either from the authors or the editors of IOWA MEDICINE.

# Smart Real Estate Investing

FRED FERNATT, C.P.A., C.F.P., and

DAVID BLACK, C.F.P.

West Des Moines, Iowa

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*Various investment vehicles are available. The challenge is choosing the one with the most attractiveness. Real estate is one obvious option. Presented here is the first of a 2-part overview on what to think about when considering an investment in real estate.*

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**R**EAL ESTATE is by far the most popular form of tax sheltered investment. The appeal of real estate is severalfold: historic steady appreciation rate, its suitability to leveraging, and the availability of favorable tax treatment.

Like any other investment, real estate has had market ups and downs; but it traditionally has grown with the rate of inflation. Unlike most investments, however, real estate can be a valuable investment with or without appreciation. In fact, real estate can easily yield an annual return of 15% with no appreciation in value.

The use of leverage allows the investor to buy bigger, better quality property and to multiply the benefits of investing in real estate. Assuming 5% annual appreciation, a 50% marginal tax bracket, and the standard 18-year depreciation period, an investment of \$36,000

used to buy a simple family home rental unit which would yield tax savings of \$1,000 per year and increase in value at \$1,800 per year. Using leverage, the \$36,000 could be a down payment on a \$180,000 property yielding a tax savings of \$5,000 per year and appreciating \$9,000 per year.

Many people invest in real estate as a tax shelter. As an incentive to purchase real estate, the government allows the investor to deduct the cost of the property over 18 years as depreciation. This deduction is allowed even though the property may have a useful life of 40 years or more and its value may actually be increasing. Almost unbelievably, the Internal Revenue Service allows the investor to deduct 175% of straight line depreciation through the use of accelerated depreciation. For example, a \$180,000 property written off over 18 years yields \$10,000 straight line depreciation per year, or the investor may elect to deduct \$17,500 accelerated depreciation the first year. Assuming that rents are sufficient to cover the mortgage payment and any operating expenses, the major tax advantage of owning real estate is the ability to deduct depreciation even though the property increases in value.

## DELINEATING GAIN

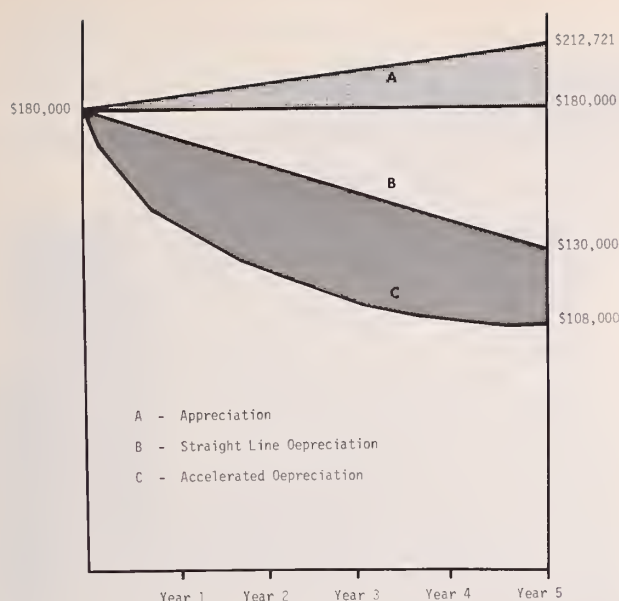
When the property is sold, the gain is the difference between the sales price and the original cost less depreciation previously deducted. The gain itself can be delineated into three layers (See graph):

1. The top layer is due to the appreciation in value of the property and is the difference between the sales price and the original cost. This is capital gain, so only 40% of the gain is included in the investor's income. The investor

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Fred Fernatt is a partner in Coordinated Financial Services, a West Des Moines financial planning firm. David Black is president of Monetary Consultants, Inc., a registered investment advisor. The authors have assisted the Iowa Medical Society in presenting several financial planning seminars. A seminar is planned at IMS headquarters for member physicians on October 3, 1984.





does not pay taxes on the remaining 60% of the gain.

2. The middle layer is the difference between the original cost of the property and the straight line depreciation deducted since the property was purchased. This is also capital gain. When the depreciation was deducted, \$1 of depreciation reduced taxable income by \$1. At sale, however, of each \$1 of gain attributable to previous straight line depreciation, only 40 cents is included in income. The net effect is to convert ordinary income fully subject to tax into capital gain income, of which only 40% is subject to tax. This conversion of ordinary income to capital gains is one of the most important but least understood tax advantages of investing in real estate. This portion of any gain is still considered to be capital gain even if accelerated depreciation was used.

3. The bottom layer of gain is the difference between the total accelerated depreciation deducted and the total deductions that would have been taken if the straight line method had been used. This portion of the gain is "recaptured" as ordinary income. The benefit of taking the extra depreciation through use of accelerated depreciation is not to reduce total income tax but to simply delay payment until the future. The total dollars of tax paid is not reduced on this portion. The benefit comes from delaying payment of a dollar in tax this year and then paying it 4 or 5 years in the future with inflated dollars.

#### ACQUISITION IMPORTANT

Simple as it may seem, acquiring a property may be one of the biggest hurdles potential real estate investors face. The investor must determine the proper time, place and terms to acquire a property. Compounding the problem is that many of the best investments may be in cities hundreds of miles from the investor.

Once the property is acquired, the investor must do more than simply collect rents and make the monthly mortgage payments. He must acquire tenants, provide lawn care and routine maintenance, and handle tenant complaints. Professional management companies or on-site managers can be expensive and are not always reliable. Also, an extended vacancy in a small property can quickly offset the tax advantages of owning the property.

Disposing of the property can be more complicated than purchasing it. The investor must determine the time to sell, solicit offers from potential buyers, and negotiate the terms.

Next month's follow-up article will discuss how real estate limited partnerships can maximize investor objectives and minimize investor problem areas. Guidelines for constructing a limited partnership real estate portfolio will be summarized.

#### UPCOMING IMS EVENTS

Several events sponsored by the Iowa Medical Society for member physicians are scheduled in October.

On Wednesday, October 3, a day-long Financial Planning Seminar will occur at IMS headquarters. It is presented in cooperation with Mr. David Black of Coordinated Financial Services and will feature expert speakers in the investment field from San Francisco and Nashville.

Two IMS/AMA Practice Management Seminars are planned for the afternoon of Tuesday, October 30, and the full day Wednesday, October 31. The first session is called, "Managing Money in Your Practice." The October 31 workshop is titled, "Insurance Processing and Coding for the Medical Office."

More information on these programs is available from IMS headquarters.

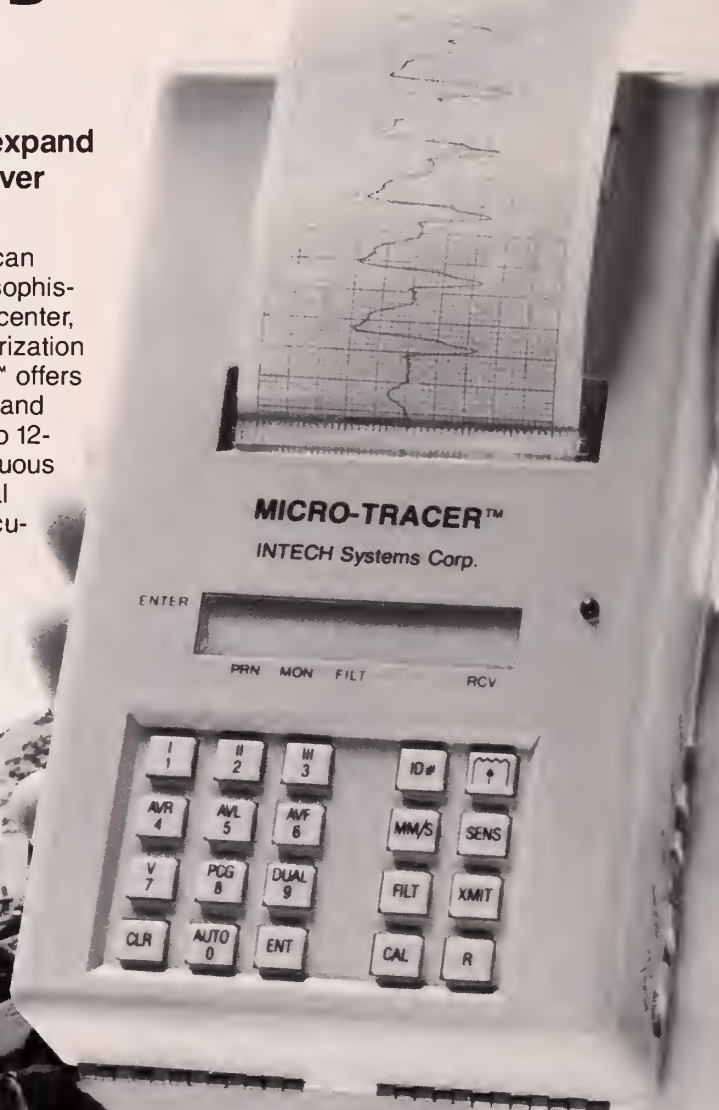
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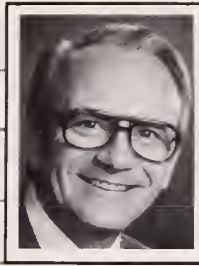
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## COMMENTING EDITORIALLY



### DOORS OF OPPORTUNITY

**T**HE PRACTICE OF MEDICINE has crossed a new threshold. Physicians starting practice today face a world of controls not imaginable by the young physician of 3 to 5 decades ago. The language is different, the mode of practice is different, the patient-physician relationship is changed, as are all the scientific aspects of diagnosis and treatment.

Many "older" physicians resign themselves to the new way of medical practice with the attitude, "I'm glad I can retire soon and be rid of the restraints of present day medical practice." We have witnessed the advent of third-party payors, utilization review, Medicare and Medicaid, and now DRG's, HMO's and PPO's. Are the opportunities the same?

The practice of medicine is highly personal. Our patients take us into their confidence and rightly expect us to rid them of their pains and infirmities. Traditionally, it has been a one-to-one relationship between the patient and physician. However, to perhaps a greater degree than we realize, that personal relationship appears to be waning. Many persons will accept being directed to a given physician or clinic by the provisions of their insurance policy. The closed panels of physicians claim the patients have a choice; that is true, but the choice is not unlimited.

Our mode of life often dictates to the patient his choice of physician — i.e., geographic location vs. the availability of a physician close by; lack of transportation to the physician of first choice, or the hours of availability. The practice arrangements of physicians are undergoing a change. More and more physicians are providing broadened office hours. Thirty or more

years ago, the practitioner was in his office 7 days a week; housecalls were common place, and the relationship between physician and patient was a close one. Then housecalls became less frequent due to demands of the office practice as well as the belief that home medical service was less desirable. Saturdays and Sundays became sacrosanct regarding office hours. The consumer began to cry at the vendor. The patient considered the physician unavailable. The emergency room/outpatient facilities of hospitals became the off-hours medical care oasis. Now more physicians are providing evening and weekend hours at their offices for medical care. We have come nearly the full circle.

There is much meaning behind this evolution. It is obvious that the onset of illness, with its resultant pain and suffering, is not a 9-5, 5 days-a-week proposition. By banding together in groups or clinics, physicians can again make medical care more readily available. It is not "just what the doctor ordered"; it is "what the patient ordered."

What does all this have to do with the younger physicians and opportunity? It means that the new generation of physicians can serve their patients as they want to be served. Though the patient is less dependent upon a close relationship with his own "personal" physician, he can obtain medical care more readily. Now is that all good, or quite bad? The days of the solo practitioner are said to be disappearing over the horizon; but, there still is a place for this mode of practice in some areas; limited, to be sure, as far as the future appears. Solo practitioners oftentimes have arrangements with other physicians to "cover" at regular or irregular intervals. The patient receives personal attention for the most part, and the solo physician gets some free time.

*(Please turn to page 391)*

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Richard M. Caplan, M.D.

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## OUR MAN IN EDUCATION

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### AN INNOCENT (YET) ABROAD

**T**HE TRAVELLING PHYSICIAN'S eye continues its perceptions.

The marvellous Art History Museum in Vienna has many examples in painting and sculpture of Adam and Eve, always displaying realistic navels. I've yet to locate a Greek statue of Pallas Athene with her torso exposed, so that I might see whether a navel appears on a being presumably sprung fullgrown from the brow of Zeus.

The many portraits there of the Hapsburg monarchs all show their striking family prognathism that, impressive as it was, was bested in the Natural History Museum by a 25-foot-long mandible (of a Greenland whale). Wouldn't those Hapsburgs be rushing to the reconstructive surgeons these days! That could allow a display of the surgical instruments used on the monarch, as there is now a display at London's Hunterian Museum of the lithotrite used in 1873 in a transurethral maneuver to crush a bladder stone in Napoleon III, as had been done also in the Belgian King Leopold I eight years earlier. Only the Frenchman died from the effort, or perhaps it was in spite of the effort.

Then there was a self-portrait of Rembrandt at age 49 showing a gold ring through his ear lobe, quite in style with all those young men on the street now who've taken to the same fashion along with punk hairdos. Reflecting about hair styles made me think how exceptional was a 15th century Italian bronze statue of Mercury wearing a mustache. Many statues from antiquity and the Renaissance show full beards but I don't recall ever seeing a depiction of a Greek god with a mustache alone.

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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

Lucas Cranach the Elder (1472-1553) dramatically depicted Christ with blood not only on the forehead, right upper quadrant, hands and feet, but drops and trickles over the entire body. And speaking of blood, another Cranach painting shows Judith holding the head of Holofernes, but this time the cut stump faces

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*"In case one thinks of corpulence as a modern affliction, its informative to study the many splendid canvasses of Peter Breughel (the Elder, 1525-1569) and note how many paunchy men and women abounded in 16th century Flanders."*

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the viewer and displays a reasonable likeness of the severed anatomical structures.

In case one thinks of corpulence as a modern affliction, it's informative to study the many splendid canvases of Peter Breughel (the Elder, 1525-1569) and note how many paunchy men and women abounded in 16th century Flanders. The famous Peasant's Wedding is a good example. What an enormous luxury to be able to wander a museum on one's own and not be rushed from one special item to another as selected by some tour guide.

And back on the street, how about all those condom vending machines in Vienna — not just in men's rooms but out on the sidewalk, too. It would be interesting to compare their VD rates with ours.

When I settled into my hotel room, I noticed with interest that the Gideon bibles there use the 1520's translation of Martin Luther, the German analogue of the 1525 Tyndale translation that served as the basis for the King James version of 1611. Each was of enormous importance in codifying its respective language for several centuries.

What would one expect to hear from the



evening radio in a Viennese hotel room? Music, of course, and surely the music of Haydn, Mozart, Beethoven, Schubert, Brahms, Bruckner, Johann Strauss, Mahler, all of whom lived and composed there. Well, what a surprise to flip the switch and encoun-

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## COMMENTING EDITORIALY

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(Continued from page 389)

Governmental regulations cause changes in our modes of practice; yet, the physician still has considerable freedom of action. Osler once said, "The young physician starts life with 20 drugs for each disease, and the old physician ends life with one drug for 20 diseases." Perhaps the new regulations will bring about some simplifications in the rendering of medical care. Certainly, we do not wish to simplify at the cost of good and adequate diagnosis and proper therapy; also, avoiding repetitious or

ter the middle of the Dvorak string quartet ("The American") that he wrote in Spillville, Iowa when he spent there the summer of 1893. And so, Iowa and other thoughts of home intrude on the traveller to mingle deliciously with all the day's adventure.

redundant procedures can decrease the cost of medicine without denigrating the values medicine has gained over the years.

The new physician has great opportunities. There are opportunities to provide complete medical care, the first call of our profession. There are opportunities to rise above the complexities of our paper-ridden society (now becoming more computer-stored) and working towards methods of providing medical care advantageous to the patient (consumer), the fiscal agents responsible for paying the bills, as well as the physician (and now we are called vendors). Doors will open; some will slam shut before we enter; but the door of opportunity waits to be opened, and so it shall. — M.E.A.

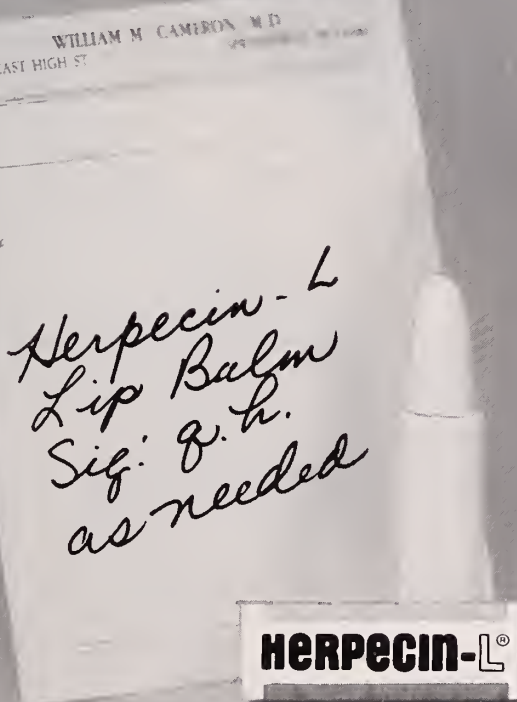
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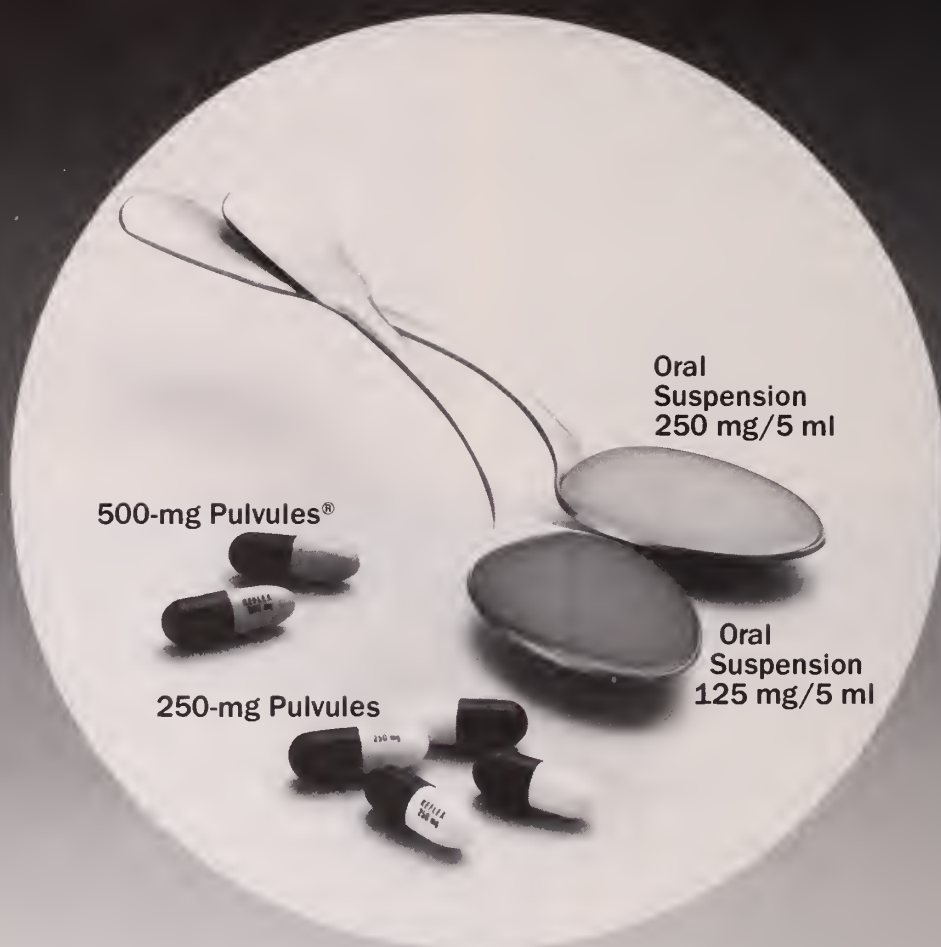
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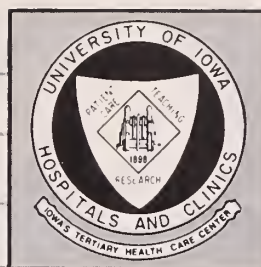


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## DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

### COMMON AND PREVENTABLE: PILL ESOPHAGITIS

**I**N THE STOMACH and the duodenum, mucosal lesions have long been known to result from the administration of some drugs, such as aspirin and the nonsteroidal anti-inflammatory drugs. Esophageal injury from contact with corrosive drugs has been recognized only in recent years. The increased recognition of such lesions, called "pill esophagitis," partly reflects the ability of endoscopists to detect mucosal lesions previously missed on barium contrast studies. There is probably also an increased incidence of "pill esophagitis" because of the trend to reduce the frequency of drug administration by increasing the size and the concentration of oral dosage forms. These bulky tablets or capsules remain in the esophagus long enough to disintegrate and cause lesions. Esophageal hemorrhage, perforation, and stricture formation are serious and life-threatening complications of such "pill esophagitis." Also, patients dislike drugs that are "hard to swallow," and this will reduce their compliance with therapeutic regimens. Careful instruction of patients on how to take drugs can circumvent such problems.

#### DRUGS INVOLVED

More than 200 cases of esophageal injury related to drugs have been reported (Table 1). A great number of cases are related to antibiotics. Doxycycline is the most commonly impli-

cated drug. Emepronium bromide — an anticholinergic widely used in Europe to increase bladder capacity — also has been found to cause esophagitis commonly.<sup>10</sup>

Other health-related preparations commonly invoked are wax-matrix potassium chloride tablets,<sup>2, 3</sup> ferrous sulfate,<sup>4</sup> quinidine,<sup>5</sup> nonsteroidal anti-inflammatory agents,<sup>7</sup> and Clinitest tablets.<sup>6</sup> It is likely that many additional cases of "pill esophagitis" have occurred without ever being recognized.

#### ETIOLOGY AND PATHOPHYSIOLOGY

The acidity or alkalinity of a medication is a major factor in its caustic action. For example, doxycycline, tetracycline, and ferrous sulfate

TABLE 1

Doxycycline	Indomethocin
Emepronium bromide	Quinidine
Potassium chloride	Clinitest tablets
Ferrous sulfate	Clinidomycin
	Ascorbic acid

dissolved in water form solutions with pH values of 3.0 or less.<sup>1</sup> Clinitest tablets contain sodium hydroxide, which has a basic pH and produces heat when hydrated. In addition to caustic and thermal injury,<sup>1</sup> some medications have an anticholinergic effect and may produce esophagitis by aggravating gastroesophageal reflux.

Oval tablets have faster transit times than round tablets, and coated tablets are swallowed more easily than uncoated ones.<sup>12</sup> In supine subjects, barium tablets the size of commercial aspirin remain in the esophagus for 5 to 30 minutes and sometimes much longer.

(Please turn to page 394)

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

## DRUG THERAPY REVIEW

(Continued from page 393)

Esophageal transit may be delayed further by peptic strictures, motility disorders, or compression of the esophagus by the aortic arch or left atrium. Most instances of potassium chloride esophagitis have occurred in patients with marked cardiomegaly.<sup>8</sup>

### CLINICAL MANIFESTATIONS AND COMPLICATIONS

Drug-induced esophageal lesions manifest themselves by the sudden onset of odynophagia and retrosternal discomfort, or dysphagia. Many patients give a history of having taken their oral preparations without adequate liquids just before bedtime and have noted that the tablet or capsule "stuck in the chest."<sup>1</sup>

At endoscopy, most lesions have been found to be circumscribed and located in the mid-esophagus. Antibiotics and anti-inflammatory agents seem to cause only mucosal

ulcerations. Potassium chloride and quinidine tend to cause injury that is followed by the formation of esophageal strictures. Perforation has been described, and severe hemorrhage may also occur. Erosion into the aortic arch is a particularly catastrophic complication.<sup>8</sup>

The differential diagnosis of pill esophagitis includes esophagitis due to gastroesophageal reflux, peptic esophageal stricture, esophageal carcinoma, and esophageal motility disorders.

### RECOMMENDATIONS FOR PREVENTION

Patients should remain upright while taking tablets or capsules, and they should swallow them with adequate amounts of fluids (75 cc-100 cc). Patients who are bedridden or who have difficulty swallowing are particularly predisposed to esophageal injury. They should use liquid preparations or suspend their medications in a suitable vehicle (water, soft food) before swallowing them. The latter approach requires confirming that the drug is chemically stable following such manipulations.

Alternatively, a preliminary sip of water will improve deglutition and esophageal transit. Therefore, the practice of assisting patients into a sitting position and instructing them to take a sip of water before swallowing their medications should serve to prevent this complication. — JEFFREY MURRAY, M.D., AND KONRAD SCHULZE, M.D., *Department of Medicine*.

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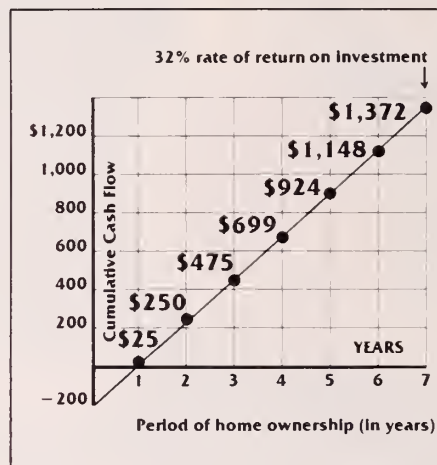
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Information of Interest

## STATE DEPT. OF PUBLIC HEALTH



### QUALITY AND COSTS: ADVANCING ON BOTH FRONTS

*This material has been prepared by Steve Braun,  
Office for Health Planning and Development.*

**I**N A RECENT editorial on the State Health Facility Council, the *Des Moines Register* criticized a decision to approve the purchase of shock wave lithotripters by the University of Iowa and a Des Moines organization. While the *Register's* past protests against unnecessary health care services, equipment and expenditures have been on target, this time I believe the *Register* took a stand against the best interests of consumers.

Removing kidney stones by using a shock wave lithotripter is a very new technique in the United States, but was developed in the early 1970's in Germany and has been used there ever since. Two lithotripters are now in place in the U.S. pending expected FDA approval of wider installation.

In Germany and in the United States, doctors have found that these lithotripters are 99% effective in removing even large stones without surgery and without serious side effects. This would be a remarkable success rate for an established and long-tested technique, much less a recent addition to medicine. In addition, it has been conservatively estimated that 70% of all people who now have surgery for kidney and ureter stones are candidates for lithotripsy.

Using a lithotripter involves no surgery, which involves no anesthesia, no risk of post-operative infection, and a hospital stay at least 6 days shorter than surgery, less if it is found

that the current 3-4 day stay can be reduced to an outpatient visit. The direct savings for all avoided surgery in Iowa for one year are estimated to be 34% more than the cost of setting up one machine. Indirect savings will be even greater when you consider that 5-8% of all kidney surgery results in loss of kidney function because of the surgery. When kidney function is lost, either more surgery is required (at \$2-5,000) or there is the need for transplantation or dialysis, at a cost of \$25,000-30,000 per patient per year. At this rate we would pay for both approved units with the indirect savings alone in as little as 4 years. If direct dollar savings are added, both units could be paid for in 13 months! This does not even consider the savings from a reduced convalescence, which can be 2-4 weeks following surgery.

This also does not take into account the real savings to individuals in reduced travel time, lodging costs, and time off from work for persons located several hours from either Iowa City or Des Moines. Staff people at the Iowa State Department of Health estimated this "out-of-pocket" savings at over \$600 per patient.

It can be argued, of course, that one center could theoretically serve all of Iowa, and that savings would thus be higher than if two units were established. If we treat only those requiring immediate surgery (acute cases) then one center could probably handle all of Iowa's cases and have some time left for referrals from other states. Over a period of 10 years the net savings from performing lithotripsy in one center would be about 22 million dollars, as opposed to 12 million dollar net savings when 2 centers are established.

If, on the other hand, lithotripters are used to prevent medical hospital stays, due to recurrent attacks of kidney stones, it is not likely that either of the proposed facilities could handle even Iowa's case load alone. In this

This information on public matters is furnished and sponsored by the Iowa State Department of Health.



## July 1984 Morbidity Report

case, 2 units will produce greatly increased savings over one facility.

The compelling argument, however, in favor of both projects, is not economic but moral. A lithotripter has been shown to be a safer, more effective treatment than anything currently available for kidney stones — an extremely painful, debilitating, and potentially fatal condition. Given this, it is our obligation to make the service available and accessible to all our citizens. We must consider the long lead time to develop such a complicated service, and that neither project sponsor estimated they would be functioning before the spring of next year. Thus, the decision of the Health Facilities Council is a positive one on several counts.

Unlike C.A.T. scanners, which the *Register* cites as another example of an expensive technology which spread too fast and too far, shock wave lithotripters can nearly replace previous techniques and services rather than supplementing them. Also, shock wave lithotripters do not generate expensive ancillary services as have other advances in technology or technique, such as open heart surgery. There is also much less potential for abuse or overuse. Some angina pain can be controlled with medication. The use of coronary by-pass surgery to treat such a condition has been rightly criticized and has undoubtedly inflated our bill for health care. Of course, the heart surgeon has the satisfaction of having done everything possible when he operates rather than prescribe medication. There is also a larger fee. The incentives are reversed with lithotripsy.

It is ironic that the *Register*, which has supported so many cost saving innovations in the finance of health care, should oppose the rapid introduction of a revolutionary service which has proven so effective and efficient and promises even more in the future. Unfortunately, it is easy and fashionable today to oppose investment in new techniques and equipment because of past mistakes. If we are to maintain and improve the quality of our health care, everyone must be willing to spend time examining the facts of each proposal. I believe that the *Register* and other businesses understand this and will only require occasional reminders to help balance their attention between cost containment, quality, and access to services.

Disease	July 1984 Total	1984 to Date	1983 to Date	Most July Cases Reported From These Counties
Amebiasis	45	6	32	Jahnsan, Palk, Scott
Brucellosis	0	1	1	
Chickenpox	6384	5	5514	Dubuque, Palk
Campylobacter	152	39	203	Scattered
Cytomegalavirus	0	9	9	
Eaton's Agent infection	6	27	100	Jahnsan, Muscatine, Palk
Encephalitis, viral	2	9	27	Jahnsan, Wayne
Erythema infectiosum	0	51	25	
Gastroenteritis (GIV)	7	8751	8537	Black Hawk
Giardiasis	35	126	96	Scattered
Hepatitis, A	11	31	18	Scattered
Hepatitis, B	11	62	52	Scattered
Hepatitis, Non A-B	1	12	26	Clayton
Hepatitis type unspecified	0	8	7	
Herpes Simplex	60	528	571	Scattered
Herpes Zoster	0	2	6	
Histoplasmosis	1	16	12	Webster
Infectious mononucleosis	0	100	119	
Influenza, lab confirmed	6	176	107	Appanaose, Black Hawk, Clinton, Linn, Palk
Influenza-like illness (URI)	5	30748	28464	Black Hawk
Legionellosis	0	1	4	
Malaria	0	1	3	
Meningitis aseptic	4	18	40	Dubuque, Guthrie, Jackson, Scott
bacterial meningococcal	9 1	72 19	99 14	Scattered Wapella
Mumps	0	17	35	
Pertussis	2	5	5	Palk, Story
Rabies in animals	18	96	2567	Scattered
Reye Syndrome	0	2	2	
Rheumatic Fever	0	0	1	
Rubella (German measles)	1	1	0	Palk
Measles	0	0	0	
Salmonellosis	14	125	155	Scattered
Shigellosis	4	25	19	Dallas, Hardin, Linn, Pattawattamie
Toxic Shock Syndrome	0	9	13	
Tuberculosis fatal ill	6	40	40	Cedar, Palk, Pattawattamie, Waadbury
bact. pos.	6	34	31	Cedar, Palk, Pattawattamie, Waadbury
Typhoid Fever	0	0	0	
Venereal diseases:				
Gonorrhea	332	2448	2567	Scattered
Syphilis	0	10	10	

Other Non-Reportable Diseases: Ureaplasma Urealyticum — 9, Jahnsan, 1, Dubuque, 3, Palk, 1, Scott, 1, Webster; Haakwarm — 1, Palk, 1, Scott, 1, Webster; Ascaris — 3, Palk, 1, Jahnsan; Trich-Trich — 1, Jahnsan; Chlamydia — 1, Jahnsan.

## NEWS/PRODUCTS, PROGRAMS, ETC.

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**PHOTOMICROGRAPHY CONTEST** — Interested in a photomicrography contest? Polaroid is sponsoring a contest for unpublished photomicrographs taken on Polaroid instant film. Details may be obtained by writing to Polaroid Photomicrography Competition, 575-9P Technology Sq., Cambridge, Ma. 02139. Entries must be postmarked no later than October 5.

**REFORMULATED ADHESIVE** — Ciba Pharmaceutical Company has reformulated the adhesive for its transdermal nitroglycerin patch, Transderm®-Nitro. The new adhesive is more serviceable for patients who engage in strenuous exercises such as tennis or swimming. No significant skin irritations were reported in extensive testing programs.

**APPROVED BY FDA** — Tagamet® (cimetidine, Smith, Kline & French) is now available in individual pre-filled, disposable syringes. A Becton Dickinson Hypak™ syringe unit-dose contains 300 mg of Tagamet® in 2 cc of sterile water. It is designed for intramuscular administration or for use in intravenous admix programs.

**ACNP SPEAKERS BUREAU** — The American College of Nuclear Physicians sponsors a speakers' bureau with 100 or so physicians and scientists in nuclear medicine. At no cost, these speakers are available to medical specialty societies, state and major county medical societies, and other health related groups. For further information call Barbara Teele (collect at 202/857-1191), or write to American College

of Nuclear Physicians, Suite 700, 1101 Connecticut Avenue N.W., Washington, D. C. 20036. (Attention: Barbara Teele, Educational Coordinator).

**RHEUMATOID ARTHRITIS DRUG** — Smith, Kline, and French Laboratories are awaiting FDA approval of Ridaura® (auranofin), a disease modifying product for rheumatoid arthritis. This orally administered drug has been found comparable in efficacy to an injected gold compound but has less frequent and less severe side effects. Indications are that this drug alters biochemical events leading to tissue injury and affects both humoral and cell-mediated immunity by a condition-dependent immunoregulatory action.

**ACP REPORTS** — The American College of Physicians (ACP) has announced the dexamethasone suppression test (DST) should be considered a diagnostic tool of *unproven* value in the detection, prognosis, and management of mild to moderate depression. Further investigation and evaluation is pending. Full details are reported in the February issue of ANNALS OF INTERNAL MEDICINE. Also reported in this issue is the ACP recommendation that the use of heparin infusion pumps for the treatment of thromboembolic disease be restricted to clinical investigative settings only, as experience in outpatient use is limited.

**VISUAL AID** — Hewlett-Packard Company has a new 54-page book on the preparation of effective business graphs. The book instructs readers on how to display information in an interesting and intelligent manner. Subjects include how to choose the right chart, following design principles, writing messages clearly, and working with color. It covers the preparation of 35 mm slides as well as how to create



charts for reports and presentations. The price is \$12. Write or call your local Hewlett-Packard sales office.

**SHAKEN BABY SYNDROME** — The February issue of the *ANNALS OF EMERGENCY MEDICINE* has an informative article on a form of child abuse known as the "Shaken Baby Syndrome" where the infant suffers whiplash injury of the neck when shaken vigorously.

**NEW SOCIETY** — Board Certified Plastic Surgeons have formed a new society. The Lipolysis Society of North America has several goals — to teach a new surgical procedure (that breaks up fat cells and removes them from the

body via a suction machine) to board certified members of the American Society of Plastic and Reconstructive Surgeons; to provide a forum for interchange of new information to all members; and to provide a source of public information on lipolysis.

**NEW DISINFECTANT** — The Government's Food and Drug Administration and the Environmental Protection Agency have accepted Sporidicin-HD® (Sporidicin Co., Washington, D.C.), a new disinfectant for hemodialysis machines and reused dialyzers. This safe glutaraldehyde replaces the use of formaldehyde and bleach. Sporidicin-HD diluted 1:16 inactivates the Hepatitis B virus in 10 minutes.

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## RECENT BOOKS

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Pinckney, Cathey and Pinckney, Edward R., 1983, *Do-It-Yourself Medical Testing*, Facts On File, Inc., New York, New York. (Consumer participation is more common in recent years. This guide provides information on over 160 tests that can be performed at home. Information is given where test materials may be purchased, the cost, and what the results may indicate. The authors wisely suggest medical consultation in many instances. No treatment suggestions are given).

Munley, Ann, 1983, *The Hospice Alternative: A New Concept for Death and Dying*, Basic Books, Inc., New York, N. Y., \$17.50. The author, a sociologist, discusses the hospice experience. The chapters cover the problem of death today, life in a hospice, the dynamics of dying, and the concerns of hospice personnel.

Doman, Glenn, 1984, *How To Multiply Your Baby's Intelligence*, Doubleday & Co., Inc., Garden City, New York, \$15.95. Teach a year-old child to read; to do math problems; to understand a foreign language? Doman's Growth Revolution is to give every child, through his parents, a chance to excell. Interesting — controversial — what's wrong with letting a child be a child?

Mitterauer, Michael and Sieder, Reinhard, 1983, *The European Family*, University of Chicago Press, Chicago, Illinois. Translated from German by Karla Oostervean and Manfred Hörzinger. An interesting study of the European family structure and function from the middle ages to the present. Though the study does not concern American family life, those with a European background will find the data of interest.

Williams, Roger L., 1984, *The Horror of Life*, University of Chicago Press, Chicago, Illinois, \$12.95. Medical and social histories of 5 nineteenth century French writers — Charles Baudelaire, Jules de Goncourt, Gustave Flaubert, Guy de Maupassant and Alphone Daudel. What a life those individuals led!

*Prospective Payment: What It Is, How to Cope; Your Questions Answered*, 1983, International Health Services, Ltd., Concord, Ma., \$10. (Quantity Discount.) A summary of the reactions of providers, particularly hospitals.

Seidel, Linda, and Copeland, Irene, 1984 *The Art of Corrective Makeup: How to Camouflage Unattractive Scars and Blemishes*, Doubleday & Co., Inc., Garden City, New York, \$15.95. The author, a makeup artist, reveals techniques of concealing troublesome skin marks, in addition to aids in the total art of makeup.

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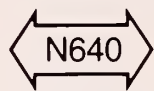


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News About Colleagues

## ABOUT IOWA PHYSICIANS



**Dr. Joe M. Krigsten**, Sioux City physician for 55 years, recently received an honorary Doctor of Public Service degree from Morningside College. Dr. Krigsten was cited as a dedicated member of the medical profession and as a community leader. A life member of the Iowa Medical Society, he has been the Iowa Health Care Association Physician of the Year. His community service includes 10 years as Woodbury County coroner, and 12 years on the boards of the State Grievance Committee and State Nursing Home Committee. Dr. Krigsten is a past president of the Sioux Valley Medical Society, St. Joseph Mercy Hospital staff and Woodbury Medical Society. He has been a fel-

low of the International College of Surgeons for 29 years.

A group of Clinton physicians recently went to bat to help raise \$5,000 for the Ronald McDonald House in Iowa City. The doctors, in a prank-filled bout against the Clinton Giants, were the victors in the benefit baseball game.

... **Dr. Douglas B. Dörner**, Des Moines, has received a certificate from the American Board of Surgery for special qualifications in general vascular surgery. This is a new certification by the American Board of Surgery recognizing vascular surgery as a subspecialty of the General Surgery Board.

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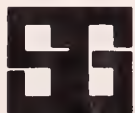
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Dr. Paul M. Seebohm, executive associate dean, U. of I. College of Medicine, is a recipient of the 1984 Walter L. Bierring Award presented by the Iowa Thoracic Society, the medical section of the American Lung Association of Iowa. Dr. Seebohm was cited for his contributions to the improvement of control over tuberculosis and other respiratory diseases in Iowa. Dr. Seebohm has been active in the teaching, training and research programs of the Pulmonary and Allergy and Immunology Divisions at the U. of I. College of Medicine. . . . **Dr. Mark Johnson** recently joined the Osage Medical Group. Dr. Johnson received the M.D. degree at the University of Nebraska School of Medicine and completed his family practice residency at the University of Oklahoma Hospital in Oklahoma City. . . . **Dr. Glen Hanson** recently began family practice in Greenfield. Dr. Hanson received the M.D. degree at the University of Minnesota School of Medicine and completed his family practice residency at Iowa Lutheran Medical Center in Des Moines.

**Dr. Russell Adams**, Waterloo, recently was selected Citizen of the Year by radio station KBBG in Waterloo. Dr. Adams was chosen for his contributions to both the medical profession and the community at large. . . . **Dr. Robert C. Rutherford** and **Dr. Clara S. Creighton**, husband and wife, recently joined **Dr. R. L. Bendixen** in family practice in Denison. Both are U. S. Navy flight surgeons who have been stationed in Pensacola, Florida. . . . **Dr. Jeffrey K. Larkin** recently joined the Carroll Medical Center. Dr. Larkin received the M.D. degree at the University of Minnesota School of Medicine and served his family practice residency at St. Joseph-Mercy Hospital in Mason City. **Dr. Patricia Siegfried** recently opened an office for family practice in Missouri Valley. Dr. Siegfried received the M.D. degree at the University of Nebraska School of Medicine, and completed residencies in both family practice and pediatrics at the University of Nebraska Medical Center. . . . **Dr. Brad Borgwardt** recently joined the ophthalmology department at Medical Associates in Clinton. Dr. Borgwardt received the M.D. degree at the University of Illinois School of Medicine and completed his ophthalmology residency at Tulane University in New Orleans, Louisiana.



Dr. David Christ recently joined Dr. Walter L. Mendenhall in the practice of urology in Spencer. Dr. Christ received the M.D. degree at the University of Kansas School of Medicine and completed his urology residency at Kansas University Medical Center. Dr. Mendenhall recently moved his office to the Medical Arts Building. He was formerly associated with Dr. Mary Gannon. . . . New officers of the Iowa Thoracic Society are — Dr. Craig Bainbridge, Sioux City, president; Dr. Edward G. Nassif, Ames, president-elect; and Dr. Steven Wanzek, Ames, secretary-treasurer. . . . Dr. Milton E. Barrent, Clinton, is a recent recipient of the Iowa High School Athletic Directors' Association 1984 Distinguished Service Award. Dr. Barrent was cited for his outstanding contributions to Iowa high school athletics. . . . Dr. Howard H. Hildebrand, senior physician at McFarland Clinic in Ames, is retiring after more than 40 years. Dr. Hildebrand received the M.D. degree at the University of Nebraska School of Medicine; interned at City Hospital in Cleveland, Ohio; and completed his pediatric residency at Children's Hospital in Buffalo, New York. He is a past president of the Iowa

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Pediatric Society; past chairman of the Iowa Chapter of the American Academy of Pediatricians and for several years a member of the Governor's Commission for Children and Youth.

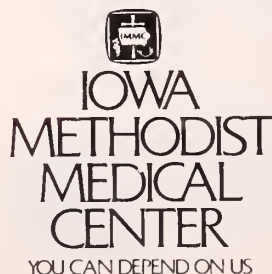
**Dr. Harry Snead** recently joined the Department of Internal Medicine at Grinnell General Hospital. Dr. Snead received the M.D. degree at the Medical College of Georgia; interned and completed his internal medicine residency at Emory University in Atlanta. Prior to locating in Grinnell, Dr. Snead was associated with Emory University Affiliated Hospital. . . . **Dr. Michael T. Berstler** recently was named president of the medical staff at Waverly Municipal Hospital. Other officers elected were — **Dr. William E. Hall**, vice president and **Dr. David B. MacMillan**, secretary-treasurer. All are Waverly physicians. . . . **Dr. David A. Ruen** has joined **Dr. Jon R. Yankey** in family practice in Mason City. Dr. Ruen received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at St. Joseph Mercy Hospital in Mason City. . . . **Dr. William E. Owen**, St. Ansgar physician for 37

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- Thomas A. Carlstrom, M.D.
- Joe F. Fellows, M.D.
- Arnis Grundberg, M.D.
- John H. Kelley, M.D.
- Douglas Reagan, M.D.
- Stephen Taylor, M.D.



years, is retiring from medical practice. Dr. Owen received the M.D. degree at Columbia University in 1942 and began medical practice in St. Ansgar in 1947. He made 3 trips to Vietnam on assignment for the American Medical Association of Volunteer Physicians to work in hospitals in war torn areas. Dr. Owen plans to continue to live in St. Ansgar.

## DEATHS

**Dr. Alvin E. Evers, 69, Pella,** died July 5 at Iowa Methodist Medical Center in Des Moines. Dr. Evers received the M.D. degree at the U. of I. College of Medicine and interned at South Bend, Indiana. He began as a solo practitioner in Pella in 1947 and later joined the Pella Medical Center where he was actively practicing at the time of his death. He was a past president of the Marion County Medical Society; member of the American Academy of Family Physicians; health officer of the city of Pella and team doctor for the athletic programs at Pella Public High School for 35 years.



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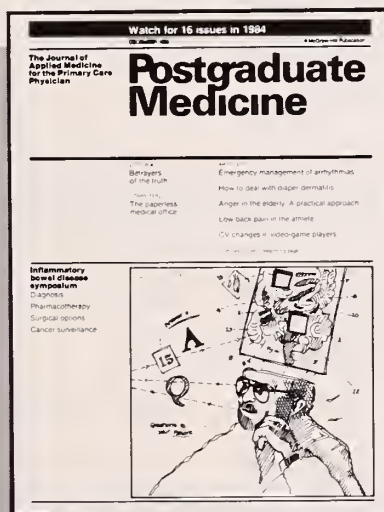


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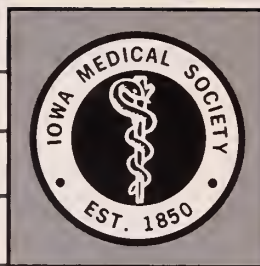
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A Monthly Commentary

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## IN THE PUBLIC INTEREST



### IMS Judicial Council

**T**HE IOWA MEDICAL SOCIETY is an organization of physicians established nearly 135 years ago to serve the interests of the public and the profession. This basic and worthy goal is pursued steadily in different ways by different components of the Society.

One such component of the IMS is its Judicial Council. The physician members of this important Council are called the Society's peacemakers, meaning obviously they hear and mediate those disputes which are inevitable. They are asked to look at and resolve questions addressed by members of the public as well as concerns raised by physicians.

The Judicial Council is selected for comment here in part because of action taken this year by the Society to expand its ranks. Three new councilors were authorized in May bringing to 16 the number of physicians serving in this capacity. The Society's councilors represent 16 geographical districts within Iowa. They are chosen by colleagues in their districts.

*What are the duties of an IMS district councilor?*

Here's what it says in the Society bylaws: "Each councilor shall be the organizer and peacemaker of the district. It shall be the councilor's duty to visit and meet with each component society in the district at least once each year. . . ." This responsibility is discharged in various ways. For example, the councilors conduct a district caucus early each year to which physicians from the county medical societies are invited. These caucuses provide a forum for the discussion of issues impacting the delivery of quality medical care.

Matters of membership in the Iowa Medical Society are the responsibility of the Judicial Council. In the formal context, the Council has supreme charge of all questions of ethics and discipline. It decides any questions of ethics, discipline or right to membership; it has the

authority to expel or suspend from membership any member found guilty of violating any rule of conduct. Such actions are infrequent; when necessary, they allow appropriately for appeal considerations.

Those Iowa physicians forming the 1984-85 Judicial Council deserve acknowledgment for their service; they need to be known to their constituent physician colleagues. Here is a rundown of the IMS councilor districts:

*District 1* — Robert L. Kent, M.D., Burlington. Counties: Des Moines, Henry, Jefferson, Keokuk, Lee, Louisa, Van Buren, and Washington.

*District 2* — Kenneth D. Dolan, M.D., Iowa City. County: Johnson.

*District 3* — Harold W. Miller, M.D., Davenport. Counties: Clinton, Muscatine, and Scott.

*District 4* — Russell W. Conkling, M.D., Cedar Rapids. Counties: Cedar, Jones, and Linn.

*District 5* — Robert T. Melgaard, M.D., Dubuque. Counties: Allamakee, Clayton, Delaware, Dubuque, and Jackson.

*District 6* — Kent D. Miller, D.O., Waterloo. Counties: Black Hawk, Bremer, Buchanan, Chickasaw, Fayette, Howard, and Winneshiek.

*District 7* — Sidney A. Smith, M.D., Oskaloosa. Counties: Appanoose, Clarke, Davis, Decatur, Lucas, Mahaska, Marion, Monroe, Ringgold, Wapello, and Wayne.

*District 8* — Lester Beachy, M.D., Des Moines. Counties: Madison, Polk, and Warren.

*District 9* — John H. Gay, M.D., Des Moines. Counties: Madison, Polk, and Warren.

*District 10* — James F. Black, M.D., Marshalltown. Counties: Benton, Iowa, Jasper, Marshall, Poweshiek, and Tama.

*District 11* — Thomas C. Graham, M.D., Iowa Falls. Counties: Boone, Grundy, Hamilton, Hardin, and Story.

*District 12* — R. Bruce Trimble, M.D., Mason City. Counties: Butler, Cerro Gordo, Floyd, Franklin, Hancock, Mitchell, Winnebago, Worth, and Wright.

*District 13* — Max E. Olsen, M.D., Minden. Counties: Adair, Adams, Audubon, Cass, Fremont, Harrison, Mills, Montgomery, Page, Pottawattamie, Shelby, Taylor, and Union.

*District 14* — Donald J. Soll, M.D., Denison. Counties: Calhoun, Carroll, Crawford, Dallas, Greene, Guthrie, Ida, Sac, and Webster.

*District 15* — Donald F. Rodawig, M.D., Spirit Lake. Counties: Buena Vista, Cherokee, Clay, Dickinson, Emmett, Humboldt, Kossuth, Lyon, O'Brien, Osceola, Palo Alto, Pocahontas, and Sioux.

*District 16* — Robert A. Boldus, M.D., Sioux City. Counties: Monona, Plymouth, and Woodbury.

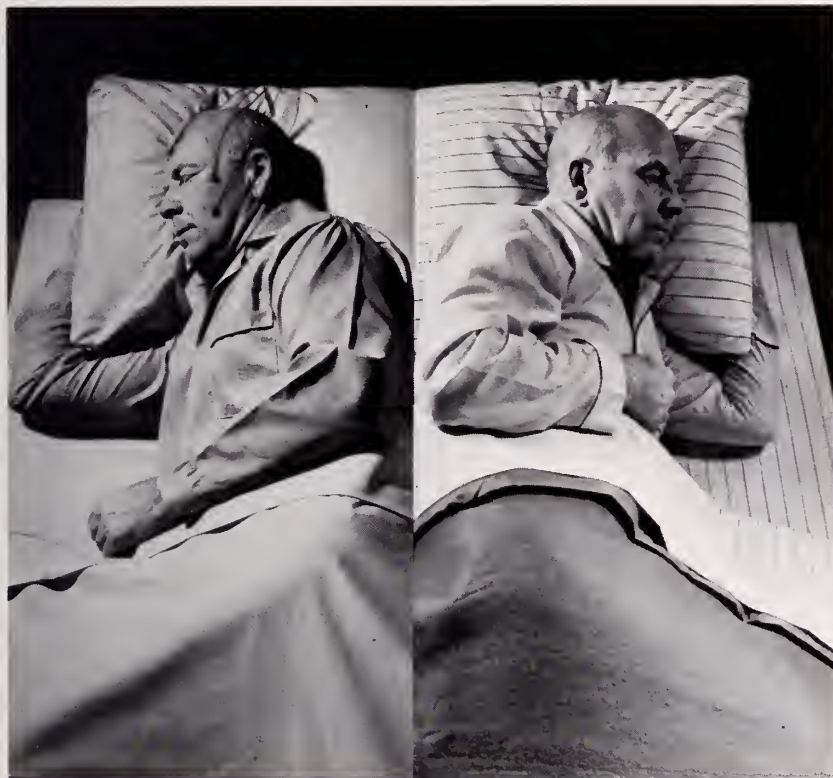
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Iowa Medicine





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**References:** 1. Kales J et al: *Clin Pharmacol Ther* 12:691-697, Jul-Aug 1971. 2. Kales A et al: *Clin Pharmacol Ther* 18:356-363, Sep 1975. 3. Kales A et al: *Clin Pharmacol Ther* 19:576-583, May 1976. 4. Kales A et al: *Clin Pharmacol Ther* 32:781-788, Dec 1982. 5. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 6. Kales A, Kales JD: *J Clin Pharmacol* 3:140-150, Apr 1983. 7. Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther* 21:355-361, Mar 1977. 8. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 9. Amrein R et al: *Drugs Exp Clin Res* 9(1):85-99, 1983. 10. Monti JM: *Methods Find Exp Clin Pharmacol* 3:303-326, May 1981. 11. Greenblatt DJ et al: *Sleep* 5(Suppl 1):S18-S27, 1982. 12. Kales A et al: *Pharmacology* 26:121-137, 1983.

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**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

**Precautions:** In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** 30 mg usual dosage; 15 mg may suffice in some patients. **Elderly or debilitated patients:** 15 mg recommended initially until response is determined.

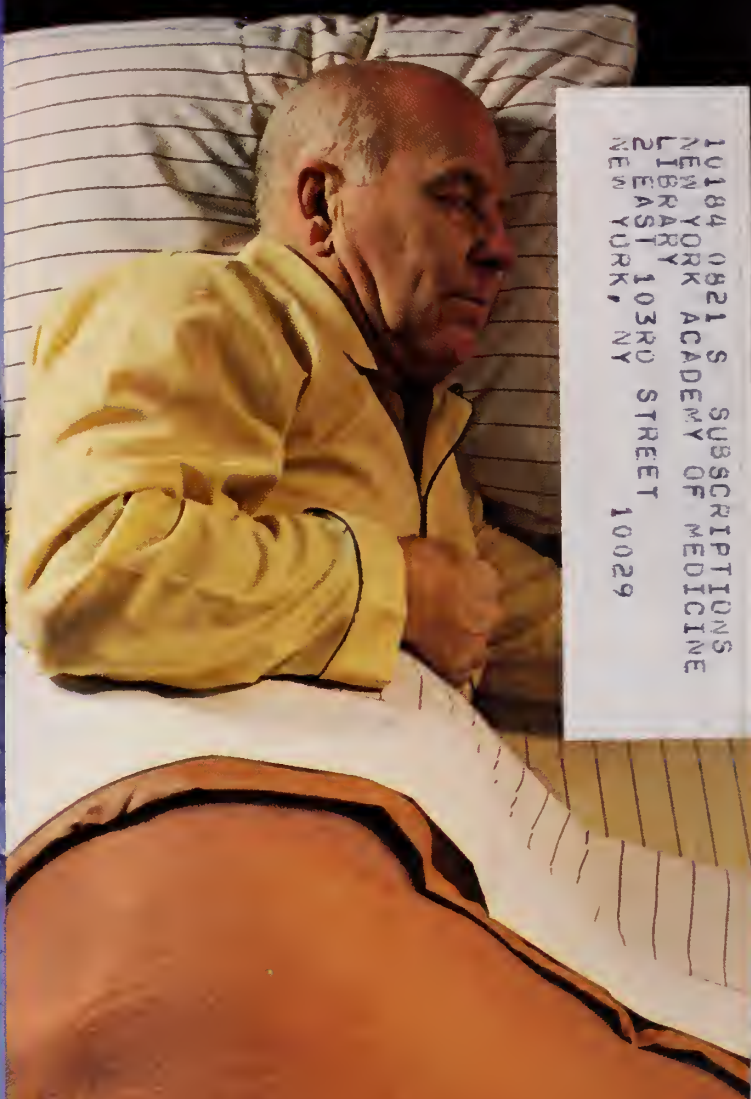
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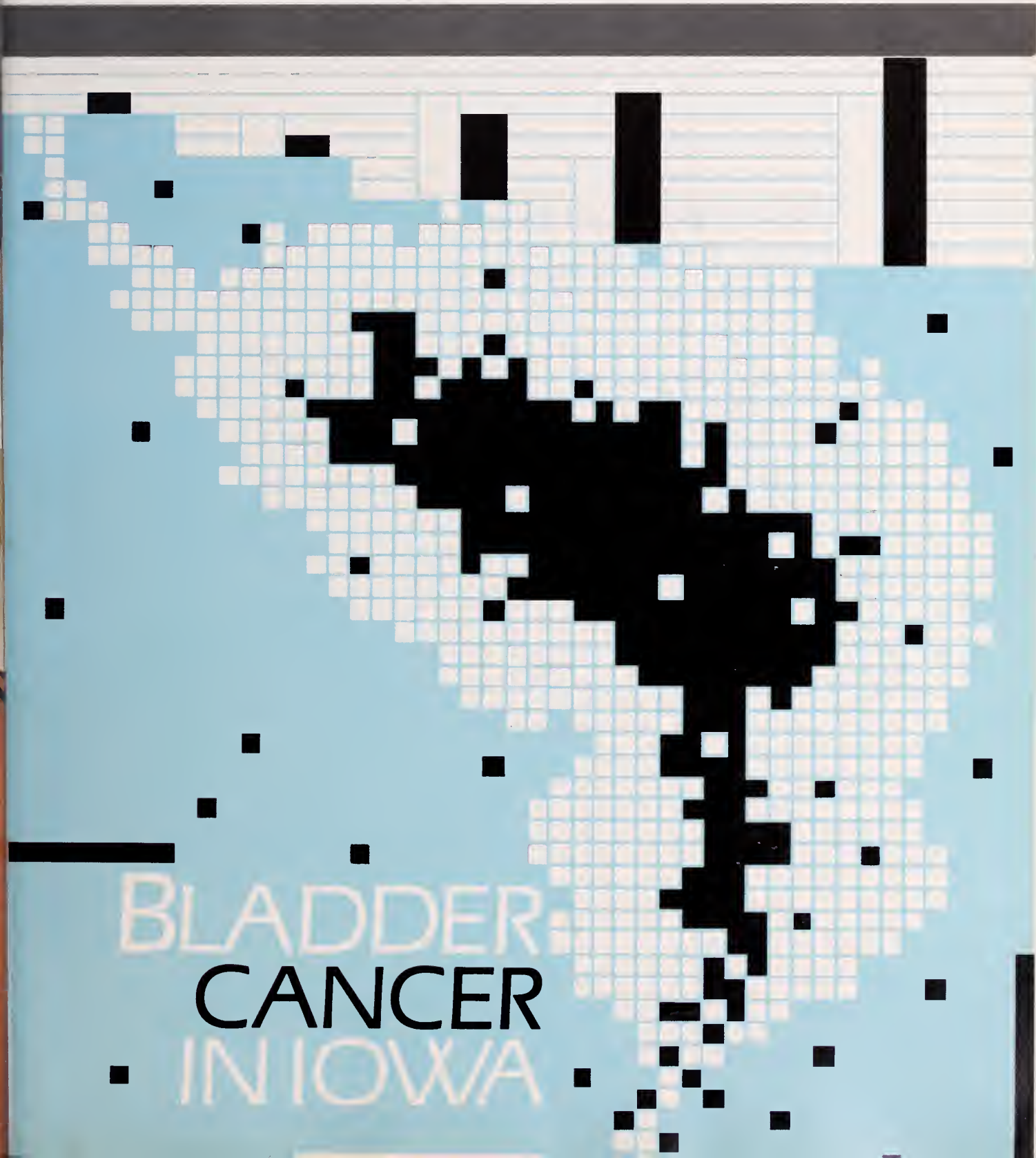
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October 1984

# IowaMedicine

Journal of the Iowa Medical Society



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# IowaMedicine

October 1984

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## ABOUT THE COVER

IowaMedicine  
Journal of the Iowa Medical Society



**ABOUT THE COVER** — This month's cover calls graphic attention to our major scientific presentation on page 423. This discussion of bladder cancer indicates that Iowa follows closely national incidence rates with respect to mortality and survival. Incidence between 1969 and 1980 is reported.

IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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### A PROMISING INNOVATION

**E**ACH YEAR the IMS House of Delegates instructs the Board of Trustees to maintain a close working relationship with the Iowa Foundation for Medical Care. In the past this has involved, in addition to staff relationships, several meetings a year with key IMS and IFMC leaders.

In order to improve relationships further, the Board of Trustees proposed the idea of a liaison committee to the Foundation including representatives from the IMS, Iowa Hospital Association, Iowa Osteopathic Medical Association and the Iowa Health Care Association. Each group was to nominate 3 persons for the committee.

This committee was designed to function in two ways:

1. To review proposed IFMC actions and offer comments and suggestions; and
2. To bring to the Foundation leadership those concerns, questions, and comments expressed by the membership of the organization which they represent.

It is the hope of the IMS leadership that its

membership will forward, in writing, inquiries, comments and concerns to IMS headquarters, c/o Eldon Huston, executive vice president. These letters will be forwarded to the IMS representatives on the committee for consideration at their next meeting.

Your leaders hope that this new avenue for IMS members to be heard by the Foundation leadership will be used frequently, constructively and persistently. Get your comments and concerns in writing now. You have a fine committee which will represent you well.

*John Tyrrell, M.D.*

**John E. Tyrrell, M.D.  
President**



MERCY HOSPITAL MEDICAL CENTER  
DES MOINES, IOWA  
PRESENTS

# **"UPDATE ON SPORTS MEDICINE"**

## **WEDNESDAY, NOVEMBER 14, 1984**

**8:00 A.M. TO 4:00 P.M.**

**GUEST FACULTY:**

**JOHN ALBRIGHT, M.D.**  
ASSOCIATE PROFESSOR  
DEPARTMENT OF ORTHOPAEDIC SURGERY  
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**W. MICHAEL WALSH, M.D.**  
ASSISTANT PROFESSOR  
DIRECTOR OF SPORTS MEDICINE  
UNIVERSITY OF NEBRASKA MEDICAL CENTER  
OMAHA, NEBRASKA

**TOPICS:**

**"COMMON KNEE INJURIES IN  
ATHLETES"**

**"DRUGS AND DOPING IN  
ATHLETES"**

**"EMOTIONAL STRESS FACTORS ON  
YOUNG CHILDREN AND  
ADOLESCENTS IN COMPETITIVE  
SPORTING EVENTS"**

**"PATTERNS OF HEAD AND NECK  
INJURIES IN COLLEGE  
FOOTBALL: INFLUENTIAL  
FACTORS"**

**"CLINICAL STUDY OF BASEBALL  
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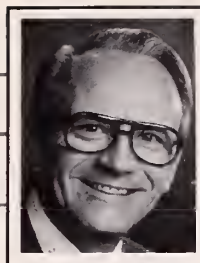
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Marion E. Alberts, M.D.

## COMMENTING EDITORIALLY



### IOWA MEDICINE HOSTS SMJAB CONFERENCE

THE IOWA MEDICAL SOCIETY and IOWA MEDICINE had the pleasure of hosting the biennial meeting of the State Medical Journal Advertising Bureau (SMJAB) on October 5 and 6. SMJAB represents its 31-member medical journals in national advertising sales. Headquartered in Oak Park, Illinois, this organization has represented our journal in national advertising for many years. The selling skills of United Media Associates, Greenwich, Connecticut, are used to attract national advertisers for any or all of the member state medical journals. This advertising is then coordinated and billed by SMJAB.

The Board of Directors and the Advisory Board of SMJAB is composed of representatives of the various medical journals. These include physicians as well as representatives of the medical societies — managing editors, executive secretaries and advertising managers. Your scientific editor has served on the SMJAB Advisory Board for a number of years.

The October SMJAB Journal Conference offered a diversified program covering most aspects of medical journal publishing. We feel

fortunate to have had Des Moines chosen for this year's meeting and hope those in attendance felt welcome. Sandoz Pharmaceuticals, Inc., sponsored a workshop on improving writing and editing skills presented by Don Ranly, Ph.D., professor of journalism, University of Missouri. Dr. Ranly is a communicator who teaches communications. He has presented nearly 200 communications seminars throughout the United States.

Other speakers on the program included Dan Kaercher, health and education editor, BETTER HOMES AND GARDENS; Karl Messerly, president, United Media Associates, William L. Valentine, president, Publishers Marketing Services, Ovid Bell, president, The Ovid Bell Press, Inc. (our printer), and George D. Lundberg, M.D., editor of JAMA. Don Neumann and Polly Lynch of our staff did the lion's share of developing the program and securing the speakers and the meeting resources. To them the participants owe a vote of gratitude; and to the Iowa Medical Society the editors of IOWA MEDICINE give thanks for helping us promote this important meeting in Des Moines, giving participants from various parts of the United States an opportunity to visit Des Moines — The Surprising Place — and Iowa — A Place to Grow. — M.E.A.

### THE CENTER OF LIFE

NEWSWEEK QUOTES Geraldine Ferraro as having said "John and Tip — the two men in my life." Well, that's fine, real nice; but Ms. Ferraro isn't the only one with men in her life. L. L. Larison Cudmore dedicates her book, *The Center Of Life*,\* as follows: "For the

men of my life: Patrick, Colin, and Sean." We know something about John and Tip, but nothing about Patrick, Colin, and Sean. We do know, however, that a woman in their lives has written a delightful and informative book.

L. L. Larison Cudmore is a cell biologist. Cell biologists, she writes, are a sad lot who, "like the furtive collectors of stolen art, are forced to be lonely admirers of spectacular architecture, exquisite symmetry, drama of violence and death, nobility of self-sacrifice, and, yes, roco-

\* L. L. Larison Cudmore: THE CENTER OF LIFE, New York, New York, Quadrangle/The New York Times Book Co., 1977.

co sex. All found in the world of the cell. Cells have everything. But visibility."

**W**HY THE TITLE, *The Center Of Life*? Listen: "Every living thing is made of cells, and everything a living thing does is done by the cells that make it up. That is the truth and there are no exceptions. . . . Cells let us walk, talk, think, make love, and realize the bath water is getting cold."

What of someone who says "See one cell and you've seen them all"? L.L.L.C.: "Actually you have to see two cells to have seen them all." — the eukaryotes (with a nucleus) and the prokaryotes (without a nucleus), "the haves and the have-nots," both of whom carry their hereditary information in DNA. . . . "The blueprints for the construction of one human being

---

*"Every page of The Center of Life is a source of vivid descriptions and picturesque expression, making quotation irresistible."*

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requires only a meter of DNA and one tiny cell. That's all. It's comforting to know that even Mozart started out this way."

Every page of *The Center Of Life* is a source of vivid descriptions and picturesque expression, making quotation irresistible. If you have not already noted this, you will pardon a few more examples:

"The kidney is not what you would call a popular organ, except as a culinary treat for some, and it certainly has not inspired romantic feelings in any of us. . . . But the talents of the kidney are truly prodigious. . . . It handles waste disposal, recycling, and reclamation with ease."

About sex: "Now, sex is important. Aside from its recreational and entertainment possibilities, it has considerable biological significance. The biological significance was there first; the entertainment value came only recently. Sex is really just a three-letter word for the exchange of genetic material."

In a discussion of biochemistry: "Everyone uses carbohydrates to get energy and the great American disease, 'fat,' whose epidemic proportions are mirrored in the litter of reducing plans — books, exercises, or some diet devised

by a thin but shifty-looking physician with an appropriately thin but dyed mustache."

The beginning of life: "Unbelievable, unsettling and sometimes unexplained things are going on inside our bodies. And the beginning of all of this is a single cell, a fertilized egg. Frantically swimming sperm meets lonely awaiting egg. They fuse. The egg gives a small, swift shiver, a slight electrical *frisson*. A wave of electrical charge sweeps over its surface. A tiny thunderbolt and *shazam!* A new organism begins. All that organism can ever be is no more than can be carried in this pinpoint-sized fragment of jelly. This is spectacular; the start of everything is simply this single cell splitting in half and then in half again. And again. One cell becomes two cells, then four cells, eight, and ultimately two thousand billion cells. No longer just cells, but a child with hair, fingernails, a heart, hair, and stomach. This isn't solved yet, how a single cell gets to be such a wonderful thing as a baby mammal."

In response to those who may view natural selection as forgetful, whimsical, and sloppy: "It is none of these. It may leave an appendix hanging around with no apparent function other than to provide surgeons with fees when heart transplanting is slow, but in general it is a ruthlessly efficient force."

Everything, however, is not all sweetness and light in the world of cell biology. There is a difference of opinion as to whether endosymbiosis can become hereditary. Here is how L.L.L.C. reacts to the many who reject her viewpoint: ". . . The alternative explanation requires wilder leaps of illogic than any fairy tale my mother ever told me . . . I happen to like logic."

**T**HIS REPORT will have served its purpose if it leads you to read *The Center Of Life*. What more can be said? Let us end, then, with two more quotations — good news and bad news. The good news: "Our blood types — A,B,O and AB — are shared with chimpanzees, orangutans and gibbons, but not with baboons or pigtailed macaques."

The bad news: "In evolutionary terms . . . we are useless to the species after we have reproduced and made our genetic contribution . . . just around, clotting up the landscape . . . of no use whatever." DANIEL F. CROWLEY, M.D., Des Moines, Iowa.



Patricia Minchin

## QUESTIONS AND ANSWERS



### ABOUT THE AUXILIARY

*Mrs. Minchin is the 1984-85 Iowa Medical Society Auxiliary president. She resides in Council Bluffs where her husband, Dallas, is an anesthesiologist. Mrs. Minchin has served her community in many roles ranging from hospital auxiliary president to Opera/Omaha Guild board member, to name only a few.*

#### What are the basic goals of the Auxiliary?

The basic goals of the Auxiliary are closely tied to our purpose. This purpose is one of supporting the Medical Society in its efforts to improve health and quality of life. The Auxiliary promotes health education, encourages volunteer participation in activities meeting health needs, and it supports health-related charitable endeavors. We pursue these goals through the AMA Auxiliary "Shape Up For Life" programs. We have used these programs in Iowa to promote health education in school health career days. Additionally, we have fostered infant car restraint programs and adolescent chemical abuse programs. We have shown concern for those environmental issues which might threaten good health. Our focus this year will be on child abuse.

#### The work of the Auxiliary continues to expand. In what fall activities are you involved?

The Auxiliary is expanding its activities in both amount and importance. We are addressing the challenges of the eighties. Our fall activities attempt to meet these challenges. The Auxiliary will have a skills development seminar on October 31. Dr. David Schor of the U. of

I. pediatrics department will speak on child and sexual abuse. As a member of the Iowa Coalition for Comprehensive School Health Education, we will sponsor a conference in Ames in November for those involved and/or interested in school health education.

#### One Auxiliary program involves voter registration. How is it going?

The Auxiliary is working with IMS staff on voter registration. We have been amazed to learn as many as 25% of Iowa physicians and their families are not registered voters.

#### Are you satisfied with your membership levels in recent years?

Since 1978 our membership has fluctuated between 1,250 and 1,350. These figures are satisfactory. However, recognizing the membership potential, we know growth is possible and appropriate. There are approximately 3,500 physicians in Iowa. Assuming 70% have spouses, we have the potential for 2,400 members. Through a new approach to membership recruitment, we hope to contact personally each of these potential members.

#### Should the IMS member physician urge his or her spouse to become active in the IMS Auxiliary?

Most certainly! Physicians and spouses should belong to the Society and the Auxiliary. Both organizations promote the betterment of health. The Society brings together and organizes the medical profession in the state. Its Auxiliary is there to supply support and assistance. The Auxiliary promotes fellowship and open communication between medical families. Join us. Together we can do more.

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Ronald Shirk, D.O., Charter Community Hospital



# Bladder Cancer in Iowa

AMBATI S. NARAYANA, M.D., and

PETER J. WEYER

Iowa City, Iowa

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*The incidence of bladder carcinoma in Iowa is keeping in line with the national trend even though the state is part of the American agricultural "heartland." Iowa closely follows national averages with regard to mortality and survival rates for bladder cancer patients.*

---

CARCINOMA of the urinary bladder constitutes a major portion of the cancer deaths in the United States. It is the fifth leading cause of death in males over 75 years of age, indicating that invasive bladder cancer is primarily a disease of the elderly. The incidence of bladder cancer in the northeastern United States is substantially higher than in the rest of the country. This is a review of bladder cancer incidence in Iowa from 1969 through 1980 (1972 is omitted due to incomplete data collection).

Iowa is near the geographic center of the United States and is part of the American agricultural "heartland." Iowa's population (2.91

million) is 97.5% white. The demographics are largely rural with nearly one-half of the population living in communities of less than 2,500 persons. The per capita income in Iowa has risen from \$3,750 in 1970 to \$9,178 in 1980, which falls within the middle rather than high average income group.<sup>1</sup> The principal ethnic groups in the state are northern European: Germans account for the largest percentage (25%), followed by Danes and Swedes.

From 1969 through 1971, cancer incidence data were collected statewide by the Iowa Cancer Information System (ICIS) which participated in the National Cancer Institute's Third National Cancer Survey (TNCS). This survey collected data from 9 areas around the United States: 7 metropolitan areas and 2 entire states, including Iowa. At the conclusion of the TNCS, no further funding was available, and therefore no statewide incidence information was collected for 1972.

In 1973 the NCI established the Surveillance, Epidemiology and End Results (SEER) Program, which is an outgrowth of two earlier efforts, the National Cancer Surveys and the End Results Group Program. The reorganized State Cancer Registry of Iowa joined the SEER Program in 1973 and is one of 10 SEER registries operational in the United States. The population of the geographic areas covered by these registries is roughly representative of the U.S. population; the data collected provide a good overview of the cancer incidence across the country. The registry was renamed the State Health Registry of Iowa in 1979.

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The authors are associated with the Departments of Urology and Preventive Medicine at University of Iowa Hospitals and Clinics.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF OCTOBER 1984

## MATERIAL AND METHODS

Bladder cancer data were collected statewide from 1969 through 1980 (excluding 1972) by registry field representatives on regular visits to each of the hospitals and clinics in their respective areas throughout Iowa. Information was also obtained from institutions in nearby areas outside the state, such as Omaha, Nebraska and Rochester, Minnesota, where Iowa residents might be receiving treatment. The field representatives visited medical records departments, extracting information from hospital charts as well as from records available in radiology departments, pathology departments and private clinics. Iowa death certificates were examined and relevant information on cancer deaths recorded.

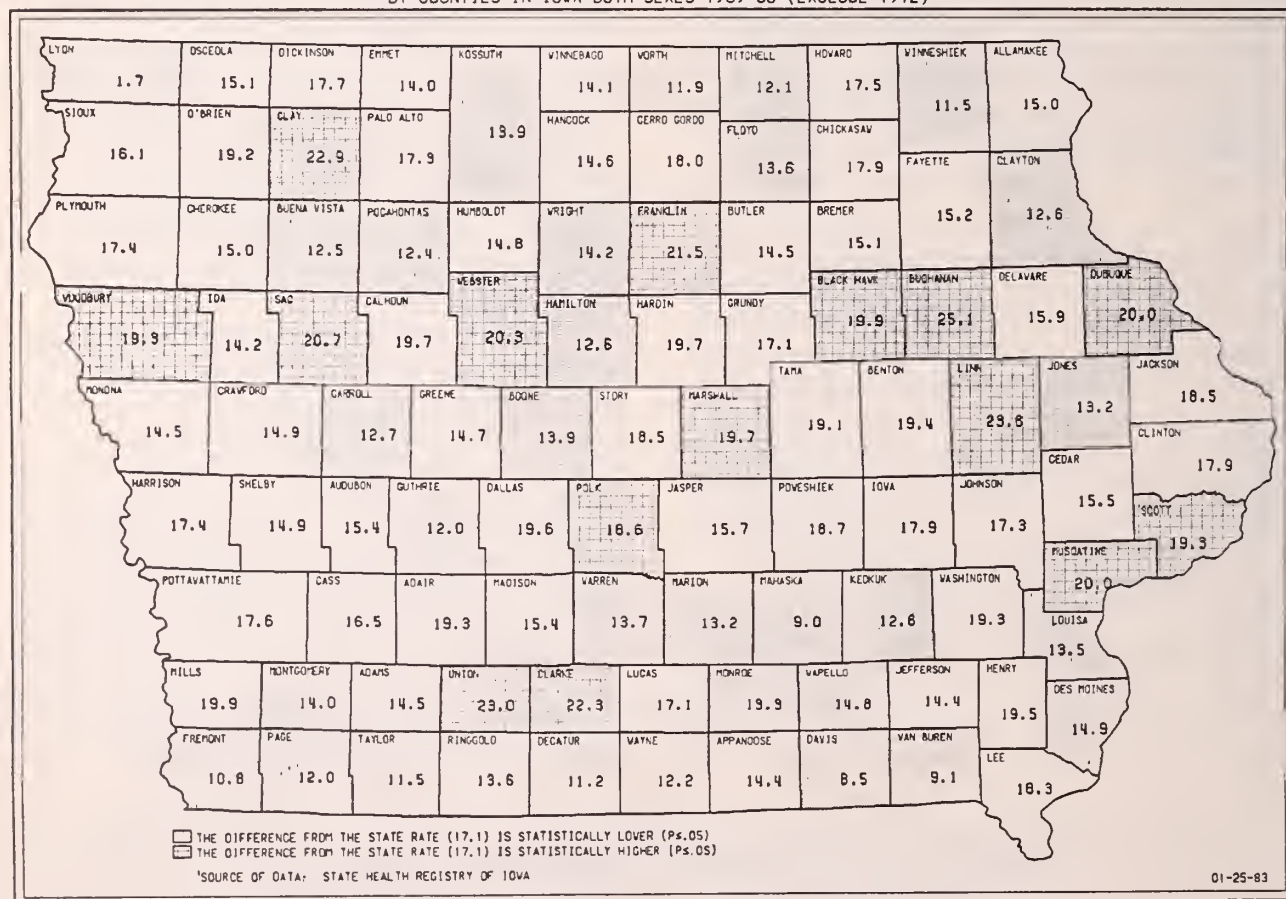
Information on staging at diagnosis and the types of primary treatments was reviewed from the years 1973 through 1980. Survival data were collected separately for males and females for these same years. Comparisons of Iowa's age-adjusted incidence and mortality

rates of bladder cancer are made with similar rates from the Third National Cancer Survey (1969-71 incidence)<sup>2</sup> and the SEER Program (1973-77<sup>3</sup> incidence and mortality.)

## RESULTS

A total of 5,660 Iowa residents were found to have carcinoma of the bladder from 1969 through 1980 (excluding 1972). The ratio of male to female cases (4,268 males; 1,392 females) is 3.1:1, which is comparable to national data. The greatest number of cases, 576, was seen in 1979, and the fewest, 406, in 1970. The age group with the highest percentage of male bladder cancer cases was the eighth decade followed by the seventh decade with 34% and 27% respectively, and in females the eighth and ninth decade with 32% in each decade (Figure 1). Average annual age-specific incidence rates are presented in Table 1. Fifteen females and 51 males under the age of 35 were diagnosed to have bladder cancer during the period surveyed.

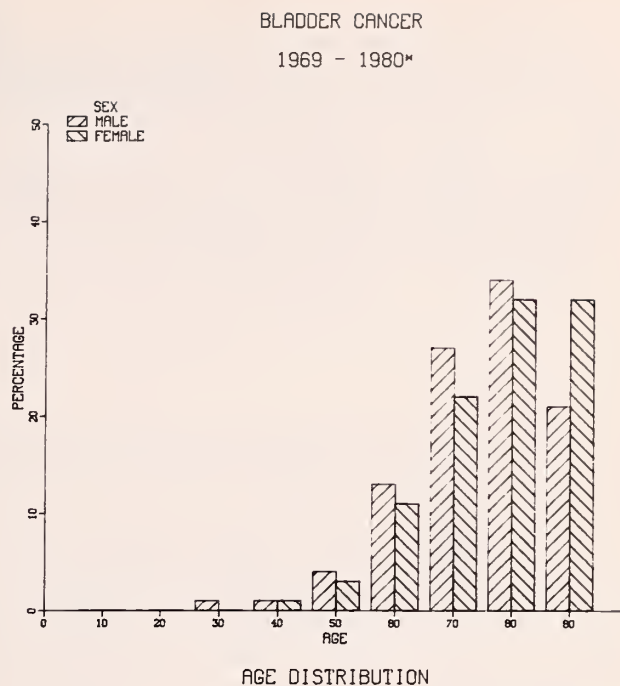
AVERAGE ANNUAL AGE-ADJUSTED INCIDENCE RATES PER 100,000 OF BLADDER CANCERS  
BY COUNTIES IN IOWA BOTH SEXES 1969-80 (EXCLUDE 1972)





The average annual age-adjusted incidence rate of bladder cancer (for sexes combined) in Iowa was 17.1 per 100,000 population for the period. Annual sex-specific age-adjusted rates are presented in Table 2. Of the total number of patients found to have bladder cancer during 1973-80, 81.9% had localized bladder tumor, 8.6% regional disease, 3.6% distant disease and 5.9% were unstaged (Figure 2). During these same years the bulk of the patients, 78.4% were treated surgically, while 9.9% were treated with a combination of surgery and radiation therapy (Figure 2).

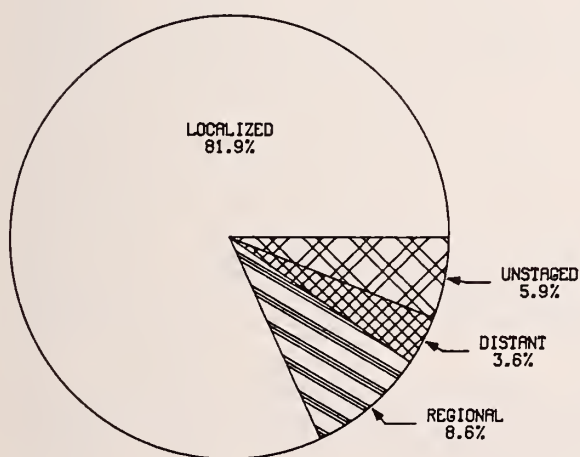
Survival for male patients is shown in Figure 3, and for female patients in Figure 4. (Survival figures are observed rates, unless otherwise specified.) For male patients with localized disease the 3-year survival rate is 64.9%; the 5-year rate is 49.4%. For male patients with tumor outside the bladder the 3- and 5-year survivals are 23% and 14.4%, respectively. The 3-year survival rate for females with localized bladder tumor is 66.7% and the 5-year, 51.8%. Of the females with regional and/or distant



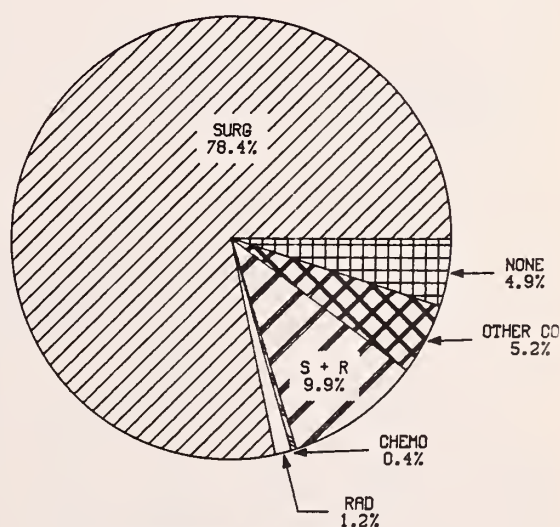
\*EXCLUDING 1972

Figure 1

RELATIVE FREQUENCIES OF STAGE AND THERAPY  
BLADDER CANCER IN IOWA RESIDENTS  
1973 - 1980 DIAGNOSES  
TOTAL CASES - 4360



STAGE AT DIAGNOSIS



FIRST COURSE OF THERAPY

Figure 2

TABLE 1  
AVERAGE ANNUAL AGE-SPECIFIC INCIDENCE RATES\* PER 100,000 OF URINARY BLADDER CANCER IN IOWA RESIDENTS 1969-1980†

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Male	—	—	—	—	1	1	1	3	8	13	25	40	70	112	165	218	259	276
Female	—	—	—	—	—	—	—	1	1	4	6	11	17	24	34	46	60	79

\* Iowa population 1970-79. 1979 population used as an estimate for 1980. Rates rounded to nearest integer.

† Excluding 1972.

TABLE 2  
ANNUAL\* AGE-ADJUSTED INCIDENCE RATES† PER 100,000 OF URINARY BLADDER CANCER IN IOWA RESIDENTS

	Average Annual Rate	1969	1970	1971	1973	1974	1975	1976	1977	1978	1979	1980
Male	26.9	24.9	23.2	23.8	27.4	30.4	26.2	27.7	27.9	28.5	29.0	27.3
Female	7.9	7.9	6.0	7.5	7.9	7.7	9.1	9.5	8.1	8.2	8.4	6.6

\* Excluding 1972.

† Standard — 1970 Iowa population.

TABLE 3\*  
AVERAGE ANNUAL AGE-ADJUSTED† INCIDENCE RATES PER 100,000 OF BLADDER CANCER IN WHITES,  
BY GEOGRAPHIC AREA, THIRD NATIONAL CANCER SURVEY, 1969-71

	All Areas	Iowa	Detroit SMSA	Pittsburgh SMSA	Atlanta SMSA	Birmingham SMSA	Dallas-Ft. Worth SMSA	Minneapolis- St. Paul SMSA	San Francisco Oakland SMSA	Calarada
Male	23.5	21.8	26.0	25.2	19.2	19.4	19.2	22.6	25.1	24.6
Female	6.2	5.2	6.8	7.1	4.7	3.8	4.9	6.7	7.3	5.9

\* Third National Cancer Survey: Incidence Data.<sup>2</sup>

† 1970 Standard.

TABLE 4\*  
AVERAGE ANNUAL AGE-ADJUSTED† INCIDENCE RATES PER 100,000 OF BLADDER CANCER IN WHITES,  
BY GEOGRAPHIC AREA, SEER PROGRAM, 1973-77

	All Areas	Iowa	Detroit Metra Area	Connecticut	Atlanta Metra Area	New Orleans Metra Area	New Mexico	Utah	San Francisco Oakland SMSA	Seattle- Puget Sound	Hawaii
Male	27.0	25.7	28.3	29.7	26.3	32.9	20.0	21.6	26.8	27.4	31.3
Female	7.1	6.1	7.3	7.9	6.3	8.6	6.1	5.9	7.4	7.3	5.2

\* SEER: Incidence and Mortality Data, 1973-77.<sup>3</sup>

† 1970 Standard.



TABLE 5\*  
AVERAGE ANNUAL AGE-ADJUSTED† MORTALITY RATES PER 100,000 OF BLADDER CANCER IN WHITES,  
BY GEOGRAPHIC AREA AND PERIOD, SEER PROGRAM

	United States 1973-77	All Seer Areas 1973-77	Iowa 1973-77	Detroit 1973-77	Connect- icut 1973-77	Atlanta 1975-77	New Orleans 1974-77	New Mexico 1973-77	Utah 1973-77	San Francisco Oakland 1973-77	Seattle Puget Sound 1974-77	Hawaii 1973-77
Male	7.4	7.7	7.4	8.1	8.4	7.3	9.2	5.6	5.5	8.2	7.7	7.2
Female	2.1	2.2	1.7	2.3	2.5	2.7	3.1	2.0	1.4	2.2	2.5	2.0

\* SEER: Incidence and Mortality Data, 1973-77<sup>3</sup>

† 1970 Standard

TABLE 6\*  
5 YEAR RELATIVE SURVIVAL RATES OF WHITE BLADDER CANCER PATIENTS†, SEER PROGRAM, 1973-79 DIAGNOSES

	All Areas	Iowa	Detroit	Connecticut	Atlanta	New Mexico	Utah	San Francisco Oakland	Seattle Puget Sound	Hawaii
Male	72	70	71	72	64	70	74	71	72	89
Female	69	72	69	70	59‡	57‡	72	65	71	89‡

\* Cancer Patient Survival: SEER Program, 1973-79<sup>6</sup>

† All ages, stages of disease, and treatments combined

‡ Standard error is equal to or greater than 10% of the rate

metastatic disease, 23.9% survived for three years and 22.5% for five years.

#### DISCUSSION

The number of bladder cancer cases in Iowa has been steadily increasing over the years, keeping in line with the national trend. However, a comparison of Iowa's age-adjusted incidence rates with both Third National Cancer Survey (1969-71)<sup>2</sup> and SEER (1973-77)<sup>3</sup> data shows Iowa rates to be slightly below the total national figures (Tables 3 and 4). Bladder cancer incidence in the United States is highest in urban areas, perhaps due to increased exposure to known bladder carcinogens found in some industrial environments, as well as the greater incidence of smoking in urban populations.

A recent study examined source of drinking water, size of municipality and cancer rates in Iowa for the period 1969-78.<sup>4</sup> A slight gradient was found of increasing incidence of bladder cancer in males with increasing size of municipality, with the highest rates found in the largest population centers. This gradient does

not exist for females.<sup>4</sup> Increased incidence rates of bladder cancer have been found in male residents of a number of small towns (population 1,000-10,000) whose only source of drinking water comes from wells drilled deep into the Jordan and Dakota sandstone aquifers.<sup>5</sup> These aquifers contain high levels of naturally occurring radium 226. Researchers found gradients of increasing male rates with increasing levels of radium 226 in the water for the periods 1973-75 and 1976-78.<sup>5</sup> Figure 5 shows average annual age-adjusted incidence rates for the period 1969-80 (excluding 1972), sexes combined, by county of residence at the time of diagnosis.

Bladder carcinoma is generally described as a malignancy with a very long latency. This observation probably arises from the fact that bladder tumor is a disease of the elderly with disease primarily found in persons in their sixties and seventies. In Iowa the highest number of bladder cancer cases was found in males in their eighth decade, closely followed by the seventh decade. For females the number of

(Please turn to page 428)

STATEWIDE SURVIVAL FOR CANCER OF THE BLADDER  
MALE RESIDENTS OF IOWA 1973-1980  
(CURVES  $\pm$  2 STANDARD ERRORS)

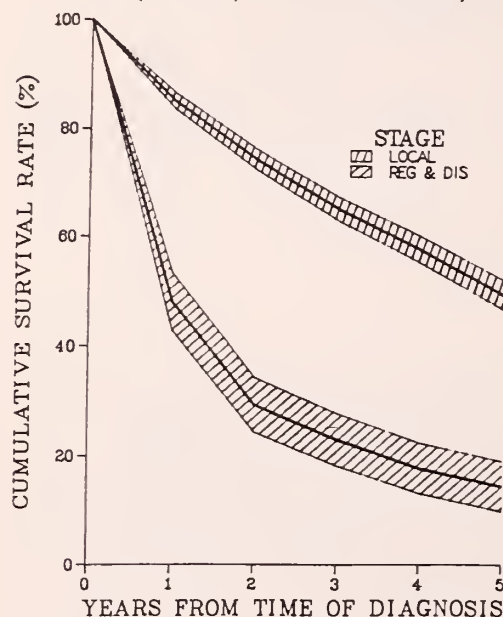


Figure 3

STATEWIDE SURVIVAL FOR CANCER OF THE BLADDER  
FEMALE RESIDENTS OF IOWA 1973-1980  
(CURVES  $\pm$  2 STANDARD ERRORS)

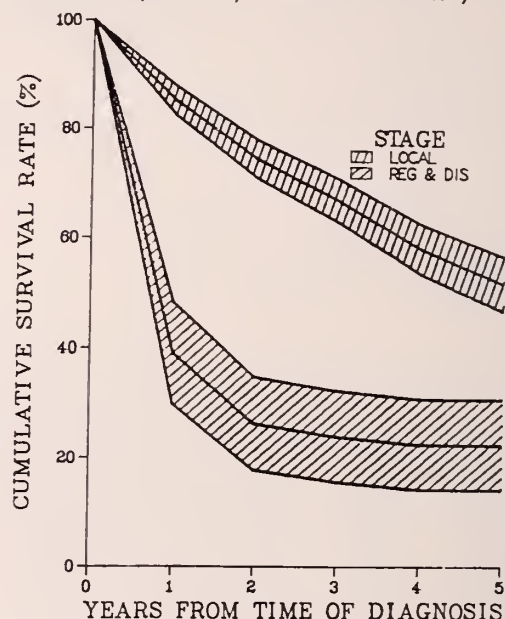


Figure 4

cases is almost the same for the eighth and ninth decades (Figure 1).

It has been reported previously that approximately 70% of all bladder cancers are localized at the time of diagnosis. In Iowa, 81.9% of the patients were found to have their carcinoma localized to the bladder. The primary modality of treatment for bladder cancer is surgery. The surgical procedures which carry the potential for cure for patients with invasive bladder carcinoma are transurethral resection and various types of cystectomy. In Iowa, 78.4% of the patients (1973-80 diagnoses) underwent surgical treatment; 9.9% received a combination of radiation therapy and surgery (Figure 2).

Iowa closely follows national averages with regard to mortality and survival rates for bladder cancer patients, based on data collected by the SEER Program. Average annual age-adjusted mortality rates for white Iowans were equal to or slightly below the national rates for the period 1973-77 (Table 5).<sup>3</sup> Five-year relative survival rates for bladder cancer patients diagnosed during 1973-79 show Iowa's survival comparable to the overall SEER rate (Table 6).<sup>6</sup>

The published data on bladder cancer show a higher mortality rate for men than for women. Analysis of the Iowa data for diagno-

sis years 1973-80 reveals the following observed survival rates, which concur with the literature. The 3-year survival for localized disease in males is 64.9%, and in females 66.7%. The 5-year survival for localized disease in males and females is 49.4% and 51.8% respectively. The overall 3-year survival for patients with regional and/or distant metastatic disease is 23% and 23.9% for males and females, respectively, and the 5-year survival is 14.4% for males and 22.5% for females (Figures 3 and 4).

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# Splenic Abscess in a Patient with Sickle Trait

BETTY A. HIBLER, M.D. and

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Iowa City, Iowa

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*A case report of a healthy young man whose only predisposition was a known sickle cell trait. Presumed source of bacteremia was self-administered intravenous drugs.*

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**A**BSCESSES OF THE SPLEEN are relatively rare, have a high mortality, and are usually not diagnosed antemortem. A plethora of case reports of splenic abscess exist, most occurring in elderly or debilitated individuals, those with sepsis, bacterial endocarditis, or with other obvious sources of infection. Splenic abscesses, therefore, occur most frequently in conjunction with abscesses of other intra-abdominal organs.

This case is of interest because it occurred in a healthy young man whose only predisposition consisted of known sickle cell trait, and whose presumed source of bacteremia was self-administered intravenous drugs.

## CASE REPORT

A 24-year-old black man, an inmate for the previous 2 weeks at the Iowa State Prison, was seen in the emergency room at University Hos-

pitals with a 5-day history of abdominal pain. The pain was located in the left upper quadrant, was severe and unremitting and without radiation. He reported episodic fevers, and a single episode of emesis 3 days previously. He denied jaundice, any gastrointestinal, genitourinary, or hematologic symptoms. Weight had been stable. He had no previous history of intra-abdominal disease, trauma, surgery or recent illnesses. His history of alcohol intake was unimpressive, but he did admit to past abuse of intravenous drugs. He was also known to have sickle trait.

He was a thin man, extremely restless and agitated. His temperature was 38.5C orally, and his pulse rate was 90-100/min with a normal blood pressure. He had no palpable adenopathy. Breath sounds were decreased at both lung bases. In the left upper quadrant of the abdomen was a large mass which was tense and exquisitely tender, extending over the midline to the right and below the umbilicus inferiorly. There was no hepatomegaly nor evidence of peritoneal irritation.

Laboratory evaluation disclosed a WBC of  $10.5/\text{mm}^3$  with a left shift, platelet count of  $659,000/\text{mm}^3$ , normal hemoglobin and hematocrit, and a normal serum amylase. Coagulation tests and electrolytes were normal. Sickle screen was positive. Blood cultures were negative.

Chest x-ray and abdominal films (Figure 1) revealed a gasless left upper abdomen, and CT scan (Figure 2) verified the presence of a large cystic mass in the left upper quadrant, totally obscuring the spleen and the tail of the pancreas. Our differential diagnosis was pancre-

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The authors are associated with the Department of Surgery, University of Iowa Hospitals and Clinics.



Figure 1. Upright chest x-ray revealing elevated left hemidiaphragm and gasless left upper quadrant.

atic pseudocyst vs. splenic hematoma vs. splenic abscess.

Exploratory laparotomy revealed a massive abscess of the spleen, totally obscuring any normal splenic tissue. The cyst was markedly tense, containing approximately 2 liters of foul-smelling purulent material. Culture of the cyst fluid produced *peptostreptococcus*. Splenectomy was performed. Histologic examination revealed multiple cysts with abscesses (Figure 3).

The patient's postoperative course was uneventful. His fever defervesced, his wound healed well following delayed primary closure, and he was discharged on the ninth postoperative day after 7 days of intravenous antibiotic followed by 7-day course of oral antibiotic. When seen in follow-up at 4 weeks postoperatively he remained well.

#### DISCUSSION

Splenic abscess is a relatively rare disease entity, with even large medical centers usually reporting only a single case per year.<sup>1</sup> Several

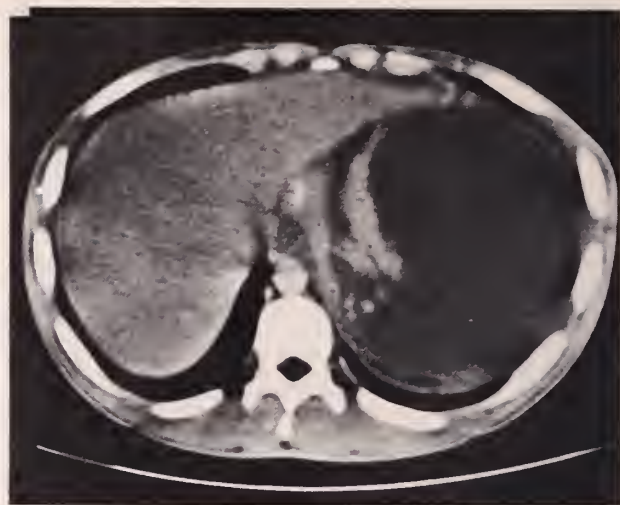


Figure 2. Abdominal CT scan demonstrating large cystic mass in left upper quadrant obliterating spleen and tail of pancreas.

autopsy series have reported an incidence of 0.14% to 0.70%. Seventy-five percent of splenic abscesses are considered to be due to metastatic spread of bacteria to the spleen from another source; 15% are secondary to trauma, and 10% are thought to result from direct spread of infection from a contiguous area.<sup>2</sup>

Only 50% of patients have findings referable to the spleen, such as left upper quadrant pain or mass, left shoulder pain or left pleural effusion.<sup>3, 4</sup> Most patients (95%) will have fever, and many have abdominal pain (60%). The most common infecting organism is *streptococcus*, followed by *staphylococcus* and *salmonella*.<sup>5</sup> However, virtually every bacterial organism has been implicated except *gonococcus*.<sup>4, 8</sup>

Diagnosis can be aided by radionuclide scan of the spleen, angiography, ultrasound, or, as in this case, CT scan. Prior to the availability of CT scanning, however, the diagnosis was usually made postmortem.

The only effective definitive therapy is splenectomy, usually in combination with antibiotics. The prognosis is best with splenectomy early in the course, the mortality being approximately 13%; if surgery is delayed or rupture occurs, the mortality rises to 40-70%. Without splenectomy the mortality is virtually 100%.

The normal spleen appears to have an immunologic function, as it sequesters and filters foreign macromolecules (i.e., bacteria) from the blood. Any disease or illness which alters splenic function may predispose one to the



development of splenic abscess. Previous case reports have noted the occurrence of splenic abscesses in patients with leukemia, polycythemia rubra vera, and thalassemia, disorders known to alter splenic function.<sup>4, 6, 8, 9</sup> The incidence of splenic abscess in patients with sickle cell disease is low since the spleen becomes infarcted, fibrosed and nonfunctional at an early age.<sup>7</sup> With sickle trait, however, the spleen remains viable and continues its filtering function. The sickling of red blood cells and resultant flow of blood through the spleen may then lead to microscopic infarctions, predisposing the spleen to abscess formation. This has been demonstrated in reports from African nations where approximately 25% of population are carriers of sickle hemoglobin, yet 74%



Figure 3. Section of excised spleen and abscess cavities.

of patients with splenic abscess have sickle hemoglobin.<sup>5</sup>

Despite the presence of predisposing factors, an inoculating source of bacteria must be present in order for the abscesses to develop. The patient presented had no history of previous illness or infection, but was an abuser of intravenous drugs. Previous case reports have documented intravenous drug abuse as a risk factor in development of splenic abscess.<sup>3, 5, 7, 8</sup> In fact, the association of sickle trait, intravenous drug abuse and splenic abscess was noted in a previous report.<sup>10</sup>

This report serves to note again this association. The prognosis is extremely poor without prompt operative therapy; therefore a thorough history must be taken, the diagnosis entertained and the appropriate diagnostic studies performed early in the patient's course.

## SUMMARY

A 24-year-old man with sickle trait, intravenous drug abuse, and splenic abscess is presented. A brief review of the clinical presentation, diagnostic modalities, and importance of early surgical therapy has been discussed.

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# Smart Real Estate Investing (Part II)

FRED FERNATT, C.P.A., C.F.P., and  
DAVID BLACK, C.F.P.  
West Des Moines, Iowa

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*Factors associated with investing in real estate were discussed in the September issue of IOWA MEDICINE. This second and concluding part of the discussion covers additional and specific aspects of this form of investment.*

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**F**ORTUNATELY MOST of the problems of investing in real estate have been addressed by the formation of limited partnerships. Typically, the general partner invests some of his own funds in the property but his primary function is to provide the limited partners with services in acquiring, managing and selling the property. The limited partners contribute the funds used to buy the property; they receive the lion's share of the tax deductions. Normally, the general partners and the limited partner share in the appreciation of the property.

Many general partners have large organizations to handle each phase of the operation. By pooling the funds of many investors and using the expertise of its organization, the general partner is able to acquire large properties in better locations and with more favorable terms than would be available to indi-

vidual investors. Since limited partnership arrangements are so attractive both for the limited partners and for the general partners, the investor must be cautious in selecting the limited partnership in which to invest. There are many wolves among the sheep.

Before investing in any limited partnership, the investor should investigate the general partner, review his previous performance with other properties, and be especially attentive to his success in selling other properties for a profit within 5 to 7 years of purchase. Financial strength, which translates to depth of staying power during down cycles of real estate, is essential. Management company depth and number of years in the real estate syndication business also are critical factors to evaluate. Minimums of 10 years experience and 10 million dollars net worth are good general starting points to use in screening potential general partners.

## EVALUATE PROPERTY MANAGEMENT

The role of effective and progressive property management is probably most often overlooked by advisors and investors alike. Evaluation of competency of the management team may also be categorized in the 3 main phases of real estate life cycle: acquisition, holding, and selling.

During the acquisition period it is critical that management remain independent in its analysis of the property from the pressure of aggressive acquisition authority. Property management must be sophisticated enough to properly analyze needed property improvements and audit current rent rolls/projected turnover in order to produce an accurate cash flow projection and operating budget. Detailed

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Fred Fernatt is a partner in Coordinated Financial Services, a West Des Moines financial planning firm. David Black is president of Monetary Consultants, Inc., a registered investment advisor. The authors have assisted the Iowa Medical Society in presenting several financial planning seminars. A seminar is planned at IMS headquarters for member physicians on October 3, 1984.



market and area surveys should include specifics on construction starts and demographics as well as dozens of calculations on competitive rent levels per square foot, vacancy rates, and projected vacancy rates.

The holding period activity is characterized by managements efforts in aggressively marketing the financial occupancy in balance with the physical occupancy. The use of disciplined procedures in prospecting the corporate market as well as the general public pays off as apartments are preleased for anticipated vacancies and rent is raised routinely. Larger property management companies have distinct advantages in using area staff to service several properties as well as negotiate lower cost purchasing contracts for goods and services like carpet and insurance.

Selling period activity should be limited to cosmetic maintenance and participation in some form of bonus program for a job well done.

#### DIVERSIFY

As usual, it is wise to avoid putting all your investment eggs in one basket when it comes to real estate partnerships. The investor may

use a combination of strategies to lower financial and tax risk over a period of years. The most obvious methods are to invest in several syndications over several years with one chosen sponsor or to invest in one type of real estate with several different sponsors. Tax shelter oriented limited partnerships should be scrutinized to avoid too heavy a concentration of one particular write-off source. Geographical diversification is advisable when it comes to apartment unit size and population center size. The heavy emphasis on sun belt consideration needs to be weighed. More complex parameters for planning include a mix of projected holding periods, disposition philosophies advocated by the general partner, and varying degrees of leverage.

Selecting a reliable general partner and then choosing a specific limited partnership in which to invest can be a lot of work. This burden can be substantially eased by working with advisors who perform this type of due diligence work on a daily basis. With proper guidance the investor can avoid the many pitfalls of investing in real estate and enjoy its substantial rewards.

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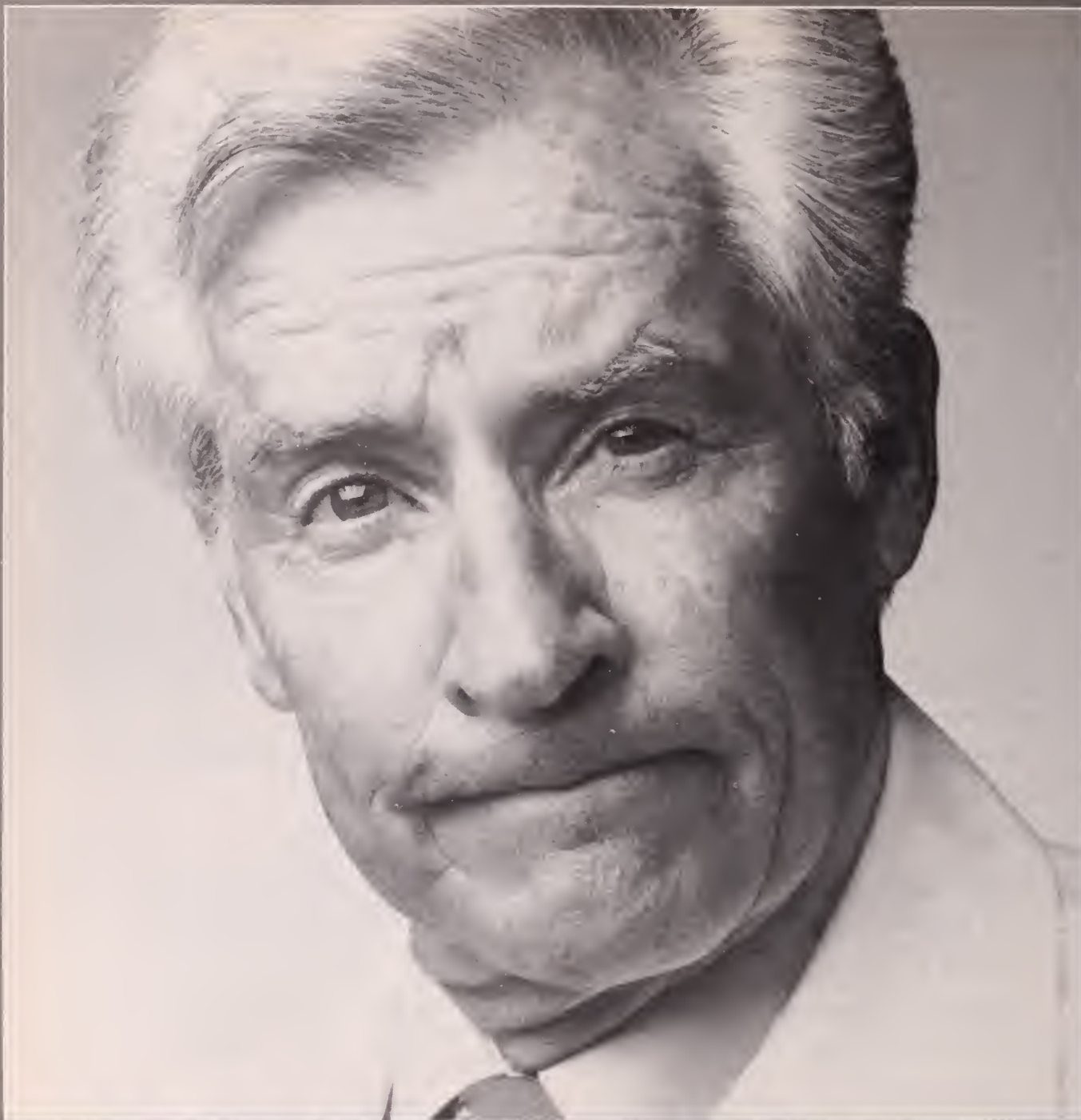
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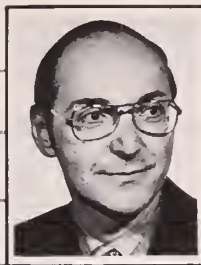


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Richard M. Caplan, M.D.

## OUR MAN IN EDUCATION



### CENTURY II OF THE REVOLUTION

**H**OW EXCITING, or threatening, it must have been to practice medicine just a century ago. Two major developments must have made practitioners feel their professional world was in turmoil. The 2 enormous developments arose, of course, with anesthesia and bacteriology. Having true relief of pain, or induced sleep, allowed marvels of surgical maneuvers to develop. With knowledge about microbes, one's understanding of pathogenesis was altered drastically, and that led to enormous changes in public sanitation and surgical antisepsis.

Many practitioners must have felt they couldn't learn the new information and procedures. They may have considered leaving practice. Others doubtless perceived great opportunities in the new knowledge. I recently acquired a text for medical practice dated 1885. For each illness discussed, therapy is advised in 4 different manners, depending on whether the practitioner's inclinations were allopathic, homeopathic, eclectic or herbal. It makes incredible reading, I assure you.

Bacteriologic knowledge opened the door to the purification of water supplies, the antibiotic era, vaccines, transfusions and all the rest of immunology, to cite just a few items. What advances might we cite as the major milestones of this century? Our lists might differ some, but wouldn't we both be likely to include antibiotics, cortisone, imaging techniques (starting with Roentgen's rays in 1895, and surging forward in the 1970's and 80's with

ultrasound, computerized tomography, isotope scans, and magnetic resonance), transplantation, microsurgery and the eradication of such major scourges as smallpox, typhoid fever, tuberculosis, measles and polio? It's hard to keep a list like this short.

But parallel to these changes in chemicals and technical procedures came enormous changes in the "administrative" or "social" side of medical work: the advance of departments of health and other governmental involvement in care; the rise of health insurance; the response of medical schools to the "doctor shortage" of the 1960's and 70's; the growth of specialty practice and certification; the support and success of programs of research in basic and clinical sciences; and now the advent of an alleged glut of doctors with associated techniques for competition in the health care industry with HMO, PPO, IPA and so on; chains of for-profit hospitals; medicare and medicaid; and now the attempts at cost control through techniques of prospective payment and DRG's. This list also staggers the mind.

**I**F ALL SUCH events have needed a century to develop, how can it be spoken of as a *revolution*? My notions about the abruptness of revolution changed a good deal after I learned how Marx described the proletarian revolution, and after I had a conversation with a wise Mexican physician who was telling me of his country. After he made several references to the "Mexican revolution now in progress," I furrowed my brow and asked when the revolution began. His prompt answer: 1810. Although our present "revolution" in the advances of medical care might be said to be entering its second century, a good case might be made for saying our present revolution started even several hundred years earlier.

*(Please turn to page 436)*

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

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## OUR MAN IN EDUCATION

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(Continued from page 435)

Most times, to those living them, probably seem like times of great change; but in retrospect, the rate of that change may range from exceedingly slow to exceedingly fast. The turmoil of nineteenth century scientific advance and industrialization could not exist alone; swirling in one part of society's stream always produces movement in all other parts. So the seeming moral stodginess of the Victorian era was breaking apart as nineteenth century technology advanced. In 1886, as Freud was developing his ideas of the id and the superego, Stevenson's tale about Dr. Jekyll and Mr. Hyde captured the public fancy by making explicit

the tormented, sinister, secret self that lay behind conventional respectability, and one of the great symbols and spokesmen of drastic change, Oscar Wilde, would write in *The Picture of Dorian Gray* (1892) that "Nowadays all the married men live like bachelors and all the bachelors like married men." The changes at the end of the century were given the French name "fin de siecle" not merely to name a time, but to refer to a growing recklessness of spirit and manners.

Long periods of seeming stability seem always followed by, maybe even induced by, movements of iconoclasm and a spirit of *avant garde*. Metaphors involving cycles and pendulums seem unavoidable. The ancient Greek philosopher Heraclitus put it thus, "Change is the only constant," and the modern American Bob Dylan thus, "The Times, They Are A-changin'."



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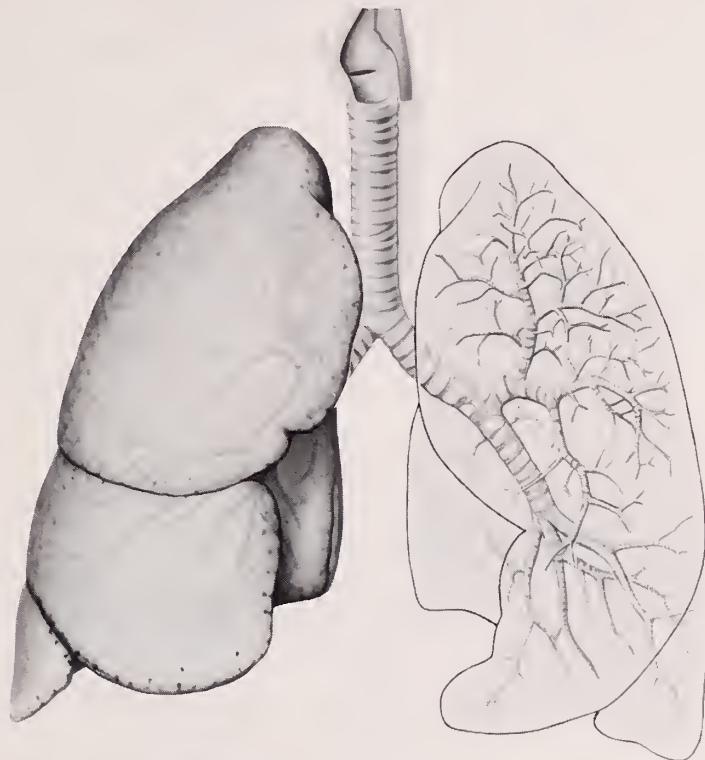
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**Contraindication:** Cecilor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

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Antibiotics, including Cecilor, should be administered cautiously to any patient who has demonstrated some form of allergy particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, manage-

ment should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions:** General Precautions — If an allergic reaction to Cecilor<sup>®</sup> (cefactor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids. Prolonged use of Cecilor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross matching procedures, when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cecilor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended. As a result of administration of Cecilor, a false positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest<sup>®</sup> tablets but not with Tes-Tape<sup>®</sup> (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy — Pregnancy Category B —** Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum

human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cecilor<sup>®</sup> (cefactor, Lilly). There are, however, no adequate and well controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers —** Small amounts of Cecilor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.15 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Cecilor is administered to a nursing woman.

**Usage in Children —** Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions:** Adverse effects considered related to therapy with Cecilor are uncommon and are listed below.

**Gastrointestinal symptoms** occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

**Hypersensitivity reactions** have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cecilor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have

occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain —** Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic —** Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic —** Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal —** Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

**Note:** Cecilor<sup>®</sup> (cefactor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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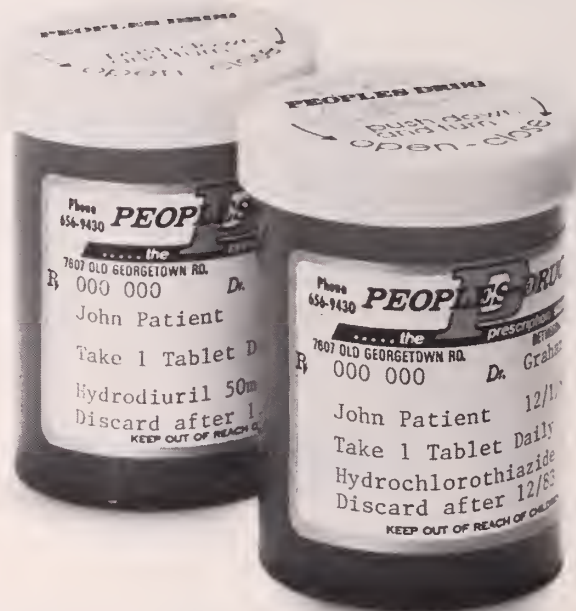
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Before prescribing, see complete prescribing information in SK&F CO. literature or PDR. The following is a brief summary.

#### WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

**Contraindications:** Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

**Warnings:** Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum  $K^+$  levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict  $K^+$  intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

**Precautions:** Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Anti-hypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

**Adverse Reactions:** Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with the other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

**Supplied:** 'Dyazide' is supplied in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); In Patient-Pak™ unit-of-use bottles of 100.

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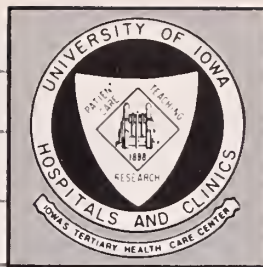
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## DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

### ORAL CONTRACEPTIVES IN 1984

**A**LTHOUGH ORAL CONTRACEPTIVES are the most effective reversible method of contraception, their use has gradually declined over the past 10 years. The explanation for this has been legitimate concern over cardiovascular side effects and the widely publicized but unfounded fear that oral contraceptives can cause cancer. Low-dose estrogen tablets, containing less than 50 mcg of ethinyl estradiol were formulated because of the recognized dose response relationship with the steroid content of the tablet and side effects. These new oral contraceptives have been shown to be as effective in providing contraception as the older high-dose oral contraceptives. Available evidence report fewer side effects. The benefit of the low-dose estrogen preparations should be emphasized to patients so that it will become the standard oral contraceptive of the 1980s.

#### PHARMACOLOGY

Addition of an ethinyl group at the C-17 position slows hydroxylation and conjugation of synthetic steroids, thus allowing them to be taken orally. Ethinyl estradiol is the only estrogen used in the low-dose combination oral contraceptive. There are several synthetic progestins: norethindrone, norethindrone acetate, norgestrel, levonorgestrel, and ethynodiol diacetate. All are derivatives of testosterone and are called 19-nortestosterones because of the removal of the 19 carbon which minimizes androgen effect. These progestins have

different potencies so the pharmacologic activity cannot be accurately predicted based on the amount present in the tablet. Norethindrone is the weakest, its acetate slightly stronger, ethynodiol diacetate much stronger, and norgestrel the most potent. The synthetic steroids in oral contraceptives are absorbed in the small intestine, metabolized in the liver, excreted in the bile and feces with a half-life of 24 hours.

#### MECHANISM OF ACTION

The low-dose estrogen combination preparation is taken 3 out of every 4 weeks. Its contraceptive effect is primarily a result of hypothalamic mediated gonadotropin suppression with subsequent inhibition of ovulation. The estrogen component exerts a negative feedback effect on FSH secretion, stabilizes the endometrium to prevent shedding, and augments the effectiveness of the progestational agent by increasing intracellular progestin receptors. The progestational agent suppresses LH, renders the endometrium unresponsive to implantation, increases the viscosity of cervical mucus, and alters tubal motility and secretion. With appropriate use the failure rate of the oral contraceptive is less than 1%, but because of incorrect dosing the actual overall failure rate is closer to 2%. Most failures are due to delay in starting the medication after the 7-day "pill-free" interval. Use of a 28-day pack, which has 7 inert tablets, minimizes this error.

#### CONTRAINDICATIONS

The contraindications to taking the low-dose oral contraceptive are the same as for the higher dose oral contraceptives: thromboembolic or cardiovascular disease, estrogen dependent neoplasia, markedly impaired liver function,

*(Please turn to page 440)*

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

# LOW-DOSE ESTROGEN COMBINATION PILLS

	Estrogen (mcg) (Ethinyl Estradiol)	Progestogen (mg)
Loestrin 1/20	20	Norethindrone acetate 1.0
Loestrin 1.5/30	30	Norethindrone acetate 1.5
Lo/Ovral	30	Norgestrel 0.3
Brevicon	35	Norethindrone 0.5
Demulen 35	35	Ethinodiol diacetate 1.0
Modicon	35	Norethindrone 0.5
Norinyl 1 + 35	35	Norethindrone 1.0
Ortho-Novum 1/35	35	Norethindrone 1.0
Ortho-Novum 10/11	35	Norethindrone 0.5 (ten pills)
		Norethindrone 1.0 (eleven pills)
Ortho-Novum 7/7/7	35	Norethindrone 0.5 (seven pills)
		Norethindrone 0.75 (seven pills)
		Norethindrone 1.0 (seven pills)
Ovcon-35	35	Norethindrone 0.4
Nordette	30	Levonorgestrel 0.15

undiagnosed genital bleeding, congenital hyperlipidemia, pregnancy, and women over the age of 35 who smoke. Relative contraindications include hypertension, diabetes mellitus, migraine headaches, uterine myomas, and epilepsy.

## SIDE EFFECTS

**Cardiovascular Disease:** The often quoted two- to fivefold increased incidence of thromboembolic disease, myocardial infarction, and stroke is based on large epidemiologic studies involving patients taking the older higher dose oral contraceptives. Current data from patients taking the newer low-dose medication demonstrate minimal if any increased incidence of these problems in young women who do not smoke. Since estrogen is believed to be the culprit in causing hypercoagulability of the blood and predisposing to thrombus formation, this change is not totally unexpected. In addition, the type and amount of progestin has also been identified as a contributing factor to the pathogenesis of myocardial infarction; it then stands to reason that the less the steroid content of the oral contraceptive, the less the incidence of problems. Other associated risk factors such as hypertension, obesity, diabetes mellitus, and especially smoking seem to have a major influence. The significant risk of cardiovascular disorders seems concentrated in women 35 years of age or older who smoke.

**Lipid Metabolism:** Both components of the

combination pill are known to effect lipid levels. The older high-dose oral contraceptive caused a significant increase in cholesterol, triglycerides, and lipoprotein fractions LDL and VLDL. The low-dose estrogen oral contraceptives have minimal effect on these levels. Attention has been directed to alterations in HDL in patients taking oral contraceptives. Estrogens increased and progestogens decreased HDL with some variability being reported. Norethindrone appears to have the least effect on lowering HDL. The clinical significance of this difference in potential for altering lipoprotein lipid levels is not known.

**Hypertension:** Early reports of patients using the low-dose oral contraceptive have shown little if any increased incidence of hypertension. Use of the older, stronger oral contraceptive preparation revealed that 5% of the patients were unable to compensate for the increased angiotensin production and became hypertensive. If hypertension does develop, stopping the oral contraceptive will correct it.

**Carbohydrate Metabolism:** Use of the combination oral contraceptive causes glucose intolerance. This impairment may be due to a decrease in insulin sensitivity through a reduction of insulin receptors. Both the progestin and estrogen component have an effect. Evidence supports the dose relationship response, and the low-dose oral contraceptives have little effect on glucose tolerance. There is no evidence to show an increased incidence of overt diabetes in oral contraceptive users.

**Cancer:** There is no evidence that use of the combination oral contraceptive causes an increase in cancer of the cervix, uterus, or ovaries. Recent concern about a possible link between breast cancer and oral contraceptives has been refuted. Benign hepato-cellular adenomas have been reported to be increased in patients who take oral contraceptives for longer than 5 years; however, the risk is low, 1 per 250,000 users.

**Minor Side Effects:** Clinical complaints such as nausea, breast discomfort, chloasma, weight changes, and depression are reduced with the low-dose estrogen preparation.

## PROBLEMS WITH THE LOW-DOSE ESTROGEN ORAL CONTRACEPTIVE

Hypomenorrhea while taking the oral contraceptive occasionally occurs because the low-

(Please turn to page 442)



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## DRUG THERAPY REVIEW

(Continued from page 440)

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er dose of estrogen is insufficient to stimulate the endometrial growth in face of the predominant progestin-atrophy effect. Concern about possible pregnancy may be resolved by use of the sensitive blood pregnancy test, which measures the beta subunit of HCG. If the problem persists, a stronger formulation may be indicated.

Breakthrough bleeding while taking oral contraceptives is the most common clinical problem associated with the low-dose estrogen preparation. If it occurs during the first few cycles, it is usually self-limiting and nothing need be done. If it occurs later, it may be treated with 7 days of estrogen administration (conjugated estrogen 2.5 mg/day or EE2 20 mcg/day). If unsuccessful, a change of oral contraceptive may be warranted.

Several recent alterations in oral contraceptive formulation have been made to minimize breakthrough bleeding. Ortho-Novum 10/11 provides twice as much norethindrone the last 11 days of the cycle. Ortho-Novum 7/7/7 starts with 0.5 mg of norethindrone the first 7 days, increased to 0.75 mg for 7 days, and then ends

with 1 mg the last 7 days while maintaining the estrogen level at 35 mcg.

### DRUG INTERACTION

Rifampin (antitubercular drug) has been reported to lower the effectiveness of oral contraceptives by inducing hepatic enzymes that accelerate drug metabolism. Ampicillin and tetracycline have also been reported to lower the effectiveness of oral contraceptives by disruption of gut flora and altering enterohepatic recirculation of the drug. Although not proven, this possible decreased effectiveness of the low-dose oral contraceptive may be offset by the use of additional contraceptive methods when taking these medications. — E. K. CHAPLER, M.D., DIRECTOR, DIVISION OF REPRODUCTIVE ENDOCRINOLOGY, DEPARTMENT OF OBSTETRICS AND GYNECOLOGY.

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tions. It is metabolized in the bloodstream, thus being self-degrading. This drug should be used only by adequately trained individuals familiar with its actions, characteristics and hazards.

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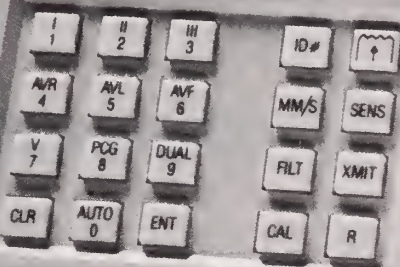
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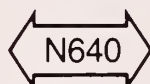


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Information of Interest

## STATE DEPT. OF PUBLIC HEALTH



### SELF-ADMINISTRATION OF MEDICATIONS IN LONG TERM CARE FACILITIES

**R**ESIDENTS OF LONG TERM CARE facilities who self-administer medications can do so only with the written approval of their physician. Some confusion has occurred regarding the meaning of the term "self-administration of medications" and the degree of assistance, if any, which can be provided to residents so certified.

Self-administration of medications by residents in long term care facilities means the residents are capable of taking their own medications without staff assistance, supervision or prompting. These medications may be retained in locked storage in the residents' bedrooms, but this is not required by the rules. Regardless of the location, each resident certified must be totally independent in administering their own medications.

Many facilities are not comfortable leaving medications in the residents' rooms. Rationale usually given is the residents' capability for self-administration and concern other residents may tamper with or take the medications. If their concerns are valid, residents are probably not capable of assuming total responsibility for their medications. Residents who require assistance or supervision or must be reminded to take their medications cannot be classified as capable of self-administration. Medication must then be administered by licensed nurses or by medication aides who have successfully completed the state-approved course for administration of non-parenteral medications.

In what appears to be an effort to circumvent the rules governing the operation of Residen-

tial Care Facilities and RCF's for the Mentally Retarded, facility staff have obtained certification for self-administration of medications for residents who are not capable of meeting the criteria described thus avoiding the need for qualified staff. Staff who are qualified to administer medications and knowledgeable of their actions are needed to teach residents what, when, why and how to take their medications as well as adverse reactions which may occur. Observations by staff for adverse reactions are also necessary since many free standing residential facilities have a high population of residents who are retarded or have a mental health diagnosis and may not comprehend the significance of symptoms displayed.

Department policy regarding self-administration of medication is not meant to discourage the teaching of skills so residents can become more independent, but is designed to assure responsible administrative practices in facilities.

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**SEND FOR FREE REPORT** — The American Council on Science and Health (ACSH) has determined that video display terminals are not a radiation hazard, but other problems may be associated with their use. Computer terminals, word processors, and similar devices do not cause cataracts, permanent damage to vision, miscarriage or birth defects. However, through poor design or improperly designed work stations with improper lighting, ill-fitting chairs, and improper table heights, the operators may develop burning and itching of the eyes, headaches, back, neck and arm aches, as well as fatigue. A copy of the report, "Health and Safety Aspects of Video Display Terminals," can be obtained from ACSH, 47 Maple Street, Summit, New Jersey 07901. Enclose a self-addressed stamped (37¢), business size (#10) envelope.

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STATESMAN INVESTMENT ADVISORS, INC.

## August 1984 Morbidity Report

Disease	August 1984 Total	1984 to Date	1983 to Date	Most August Cases Reported From These Counties
Amebiasis	7	52	32	Baane, Clinton, Harrison, Jahnson
Brucellosis	0	1	3	
Chickenpox	3	6387	5514	Dubuque
Campylobacter	49	201	252	Scattered
Cytomegalovirus	1	10	9	Black Hawk
Eaton's Agent infection	1	28	101	Jahnson
Encephalitis, viral	11	20	41	Scattered
Erythema infectiosum	0	51	25	
Gastroenteritis (GIV)	8	8759	8550	Black Hawk
Giardiasis	84	210	145	Scattered
Hepatitis, A	3	34	21	Jahnson
Hepatitis, B	9	71	57	Scattered
Hepatitis, Non A-B	1	13	30	Pattawattamie
Hepatitis type unspecified	0	8	8	
Herpes Simplex	101	629	640	Scattered
Herpes Zoster	0	2	6	
Histoplasmosis	0	16	12	
Infectious mononucleosis	1	101	120	Kassuth
Influenza, lab confirmed	0	176	207	
Influenza-like illness (URI)	56	8759	8550	Black Hawk, Jahnson
Legionellosis	2	3	5	Haward, Lyan
Malaria	0	1	3	
Meningitis aseptic	11	30	78	Scattered
bacterial	12	83	113	Scattered
meningococcal	2	21	14	Bentan, Scatt
Mumps	2	19	36	Buena Vista, Scatt
Pertussis	4	9	5	Clinton, Jackson, Palk
Rabies in animals	17	113	165	Scattered
Reye Syndrome	0	2	2	
Rheumatic Fever	0	0	1	
Rubella (German measles)	0	1	0	
Measles	0	0	0	
Salmonellosis	29	154	207	Scattered
Shigellosis	3	28	32	Lee, Mitchell, Washington
Toxic Shock Syndrome	1	10	13	Palk
Tuberculosis fatal ill	5	45	49	Jahnson, Linn, Marian, Palk, Waadbury
bact. pas.	5	39	39	Jahnson, Linn, Marian Palk, Waadbury
Typhoid Fever	0	0	0	
Venereal diseases: Gonorrhea	490	2938	3082	Scattered
Syphilis	1	11	14	Scatt

Other Non-Reportable Diseases: Ascaris — 3, Jahnson; Chlamydia — 6,  
Jahnson, 2, Palk; Clonorchis — 1, Clinton, 2, O'Brien, 1, Iowa; Hookworm  
— 1, Palk, 2, Muscatine; Parainfluenzae — 1, Hardin; Trichuris-Trichiura  
— 1, Muscatine; Ureaplasma urealyticum — 1, Black Hawk, 2, Jahnson, 3,  
Linn, 2, Palk.



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Please turn the page for a brief summary of prescribing information.

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ibuprofen

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**Contraindications:** Anaphylactoid reactions have occurred in individuals hypersensitive to Motrin Tablets or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin, iodides, or other nonsteroidal anti-inflammatory agents

**Warnings:** Peptic ulceration and GI bleeding, sometimes severe, have been reported. Ulceration, perforation and bleeding may end fatally. An association has not been established. Use Motrin Tablets under close supervision in patients with a history of upper gastrointestinal tract disease, after consulting ADVERSE REACTIONS. In patients with active peptic ulcer and active rheumatoid arthritis, try nonulcerogenic drugs, such as gold. If Motrin Tablets are used, observe the patient closely for signs of ulcer perforation or GI bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity with papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with Motrin Tablets.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin Tablets and the patient should have an ophthalmologic examination, including central visual fields and color vision testing.

**Fluid retention and edema** have been associated with Motrin Tablets; use with caution in patients with a history of cardiac decompensation or hypertension. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of Motrin Tablets safety in patients with chronic renal failure have not been done.

Motrin Tablets can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, skin rash, weight gain, or edema.

Patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin Tablets are added.

The antipyretic, anti-inflammatory activity of Motrin Tablets may mask inflammation and fever.

As with other nonsteroidal anti-inflammatory drugs, borderline elevations of liver tests may occur in up to 15% of patients. These abnormalities may progress, may remain essentially unchanged, or may be transient with continued therapy. Meaningful elevations of SGPT or SGOT (AST) occurred in controlled clinical trials in less than 1% of patients. Severe hepatic reactions, including jaundice and cases of fatal hepatitis, have been reported with ibuprofen as with other nonsteroidal anti-inflammatory drugs. If liver disease develops or if systemic manifestations occur (e.g. eosinophilia, rash, etc.), Motrin should be discontinued.

**Drug interactions.** Aspirin, used concomitantly may decrease Motrin blood levels.

Coumarin bleeding has been reported in patients taking Motrin and coumarin.

**Pregnancy and nursing mothers:** Motrin should not be taken during pregnancy or by nursing mothers.

**Adverse Reactions:** The most frequent type of adverse reaction occurring with Motrin is gastrointestinal of which one or more occurred in 4% to 16% of the patients.

#### **Incidence Greater than 1% (but less than 3%)—Probable Causal Relationship**

**Gastrointestinal:** Nausea,\* epigastric pain,\* heartburn,\* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence); **Central Nervous System:** Dizziness,\* headache, nervousness; **Dermatologic:** Rash\* (including maculopapular type), pruritus; **Special Senses:** Tinnitus; **Metabolic/Endocrine:** Decreased appetite; **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

#### **Incidence less than 1%—Probable Causal Relationship\*\***

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma; **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia; **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS); **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit; **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis, bronchospasm (see CONTRAINDICATIONS); **Renal:** Acute renal failure in patients with pre-existing significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria; **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

#### **Incidence less than 1%—Causal Relationship Unknown\*\***

**Gastrointestinal:** Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmias (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis; **Renal:** Renal papillary necrosis.

\*Reactions occurring in 3% to 9% of patients treated with Motrin. (Those reactions occurring in less than 3% of the patients are unmarked.)

\*\*Reactions are classified under "Probable Causal Relationship (PCR)" if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under "Causal Relationship Unknown" if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine so alkaline diuresis may be beneficial.

**Dosage and Administration:** Rheumatoid arthritis and osteoarthritis: Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Do not exceed 2400 mg per day. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary.

**Caution:** Federal law prohibits dispensing without prescription.

MED B-7-S

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News About Colleagues

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## ABOUT IOWA PHYSICIANS



**Dr. Marilyn J. Lies** recently joined the Evansdale Health Center. Dr. Lies received the M.D. degree at the U. of I. College of Medicine and completed a one-year family practice residency at the Black Hawk Area Medical Education Foundation. While in medical school, Dr. Lies was presented the Family Practice Outstanding Student Award. . . . **Dr. Arnath Unahalekhaka** recently joined the Ohme Medical Center in Primghar. Dr. Unahalekhaka is a diplomate of the American Board of Family Practice; he is a general surgeon and has completed a fellowship in thoracic surgery. Prior to locating in Primghar, Dr. Unahalekhaka was an emergency room physician in Huntington,

West Virginia. . . . **Dr. N. K. Pandeya**, Des Moines, was named a fellow of the American Society of Plastic and Reconstructive Surgeons at the organization's annual meeting in San Antonio, Texas. In 1980, he was the first surgeon in the United States to be certified in plastic and reconstructive surgery by the Academy. . . . **Dr. Donovan F. Ward**, retired general surgeon from Dubuque, recently has been named president-elect of the Fifty Year Club of American Medicine. Dr. Ward is a past president of the American Medical Association; member of the International College of Surgeons, American College of Surgeons and the American Society of Abdominal Surgeons.

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AN EQUAL OPPORTUNITY EMPLOYER M/F/H

**Dr. Charles B. Brindle** recently began family practice in Sheffield. Dr. Brindle received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at Mercy Hospital in Mason City.

**Dr. Niles F. Greenhouse** recently joined the Park Clinic in Mason City. Dr. Greenhouse interned at Stamford Hospital, Stamford, Connecticut and served his obstetrics and gynecology residency at State University of New York Hospitals in Buffalo, New York. . . . **Dr. Thomas L. Duncan** recently joined Medical Associates in Le Mars. Dr. Duncan received the M.D. degree at Creighton University College of Medicine and completed his family practice residency at St. Joseph Mercy Hospital in Mason City. . . . **Dr. Joseph H. Spearing**, Harlan, has been elected to the board of directors of the Midlands Emergency Medical Services Council. Midlands EMS Council is a 12-county coordinating agency for emergency medical-rescue services. . . . **Dr. Darrell Jebesen** recently began family practice in Marshalltown. Dr. Jebesen received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at Broadlawns Medical Center in Des Moines. . . . **Dr. Francis J. Danik** has joined Waterloo Internal Medicine Associates. Dr. Danik received the M.D. degree at Washington University School of Medicine in St. Louis, Missouri and served his internal medicine residency at the University of Wisconsin College of Medicine in Madison, Wisconsin. . . . **Dr. Rodney Erikson** recently began family practice at the Vinton Clinic. Dr. Erikson received the M.D. degree at the University of Wisconsin College of Medicine in Madison, Wisconsin and completed his family practice residency in Cedar Rapids.

**Dr. Ronald L. Zoutendam**, Sheldon, recently was honored for 25 years of service to the Sheldon community. Dr. Zoutendam received the M.D. degree at the U. of I. College of Medicine and began medical practice in Sheldon in 1959. . . . **Dr. Juliana B. Alindada** recently joined the staff at the Gilfillan Clinic in Bloomfield. Dr. Alindada received her medical education at

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Manila Central University and interned at Mary Johnston Hospital in the Philippines. She served her obstetrics and gynecology residency at Ravenswood Hospital Medical Center in Chicago and Mercy Hospital in Pittsburgh, Pennsylvania. . . . **Dr. Thomas L. Bryant** has joined **Dr. Winn Gregory** in the practice of surgery in Ottumwa. Dr. Bryant received the M.D. degree at the U. of I. College of Medicine and served his surgery residency in Akron, Ohio. . . . **Dr. Richard Thorne** recently began family practice in Orange City. Dr. Thorne received the M.D. degree at the University of South Dakota School of Medicine and served his family practice residency in Sioux City. . . . **Dr. Roger A. Harden** has joined the Bluff Medical Center in Clinton. Dr. Harden received the M.D. degree at Johns Hopkins Medical School in Baltimore, Maryland; interned and served his residency in internal medicine at Baylor College of Medicine in Houston, Texas and completed a fellowship in allergy at the University of Michigan at Ann Arbor. **Dr. Scott L. Kiehlmeier** recently joined Medical Associates in Cedar Falls. Dr. Kiehlmeier received the M.D. degree and served his pediatric residency at Hahnemann University School of Medicine in Philadelphia, Pennsylvania.

**Dr. Greg Zoltani** plans to begin the private practice of neurology in Dubuque. Dr. Zoltani received the M.D. degree at the University of Illinois-Peoria and completed his neurology residency at the Medical University of South Carolina in Charleston. . . . **Dr. Jim Williams** has joined the staff at the Creston Medical Clinic. Dr. Williams received the M.D. degree at the U. of I. College of Medicine and served his family practice residency in Ogden, Utah. He formerly practiced in Steamboat Springs, Colorado. . . . **Dr. Gary Erbes** recently joined the Harlan Doctors Clinic. Dr. Erbes received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency in Waterloo. . . . **Dr. David Carlyle** recently joined the Titonka Medical Clinic. Dr. Carlyle received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency at the Waterloo Family Practice Residency Program.



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## OB-GYN — PEDIATRICIAN TEAM

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This represents an outstanding medical practice opportunity. County of 30,000 primary service area with fine small community of 12,000+ hosting two nationally known colleges and a growing industrial base. We are close to the Lake of the Ozarks as well as multiple other recreational opportunities and facilities. The Hospital has a fine tradition of strong family-practice physicians and has recently recruited an orthopedic surgeon to build its surgical team to two. There are over 400 births in this County each year, and the pediatric population is growing steadily. Residents want the best in specialist medical care. For further information regarding guarantees or other considerations contact Sharon R. Heinlen, Administrator, Callaway Community Hospital, Hospital Drive, Fulton, MO 65251, 314-642-3376.

**Dr. Gary A. Beetner** recently joined Medical Associates in Aplington. Dr. Beetner received the M.D. degree at the U. of I. College of Medicine and had a family practice residency at DeWitt Army Hospital in Fort Belvoir, Virginia. Dr. Beetner has served recently as a missionary physician in Zaire. . . . **Dr. David Carlyle** recently began family practice at the Titonka Area Medical Clinic, a branch of the Kossuth Family Health Center in Algona. Dr. Carlyle received the M.D. degree at the U. of I. College of Medicine and completed his family practice residency in Waterloo.

## DEATHS

**Dr. Harold J. Richter**, 80, Albia, died July 29 at Mercy Hospital Medical Center in Des Moines. Dr. Richter received the M.D. degree at the U. of I. College of Medicine and interned at Mercy Hospital in Des Moines. An Albia physician for 48 years, Dr. Richter retired in 1983.

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**CENTRAL IOWA MEDICAL PRACTICE NEEDS LOCUM TENENS PHYSICIAN** — Time flexible. For further information write or call Wiltfang-Paulson Clinic, Box 715, 1129 Spencer Street, Grinnell, Iowa 50112. Phone 515/236-3163.

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**OB/GYN PHYSICIAN** — Tired of the cold Iowa winters? Plan now to relocate in beautiful, sunny, Taos, New Mexico. Obstetrician/gynecologist desired for private practice. For more information contact Judy Harris, Recruitment Specialist, New Mexico Health Resources, 404 Marble, N.W., Albuquerque, New Mexico 87102. 505/242-0633.

**GENERAL SURGEON, OB/GYN AND INTERNAL MEDICINE PHYSICIANS** — To join seven-doctor family practice clinic in Cloquet, Minnesota, a community of 12,000 (30,000 service area) located 20 minutes from Duluth-Superior. Clinic facility is located one block from modern, well-equipped 77-bed hospital. Cloquet enjoys a stable economy (forest products). Additionally, our community is noted for its excellent school system. First year salary guarantee, paid malpractice, health and disability insurance, vacation and study time. Contact John Turonie, Administrator, Raiter Clinic, Ltd., 417 Skyline Blvd., Cloquet, Minnesota 55720. Telephone 218/879-1271.

**FAMILY PRACTITIONER WANTED** — BC/BE sought to join 8-member multi-specialty group. Salary guarantee with partnership possibility after first year. Contact John McDermott, Mgr., The Davenport Clinic, 1820 W. Third Street, Davenport, Iowa 52802. 319/326-1661.

**FAMILY PHYSICIAN WANTED** — For diagnosis, treatment, and patient care in all areas of family practice medicine. M.D. degree required, 1 year training in a medical residency and 2 years experience. 40 hours per week, \$70,000 per year. Apply or send resume to Job Service of Iowa, 150 Des Moines Street, Des Moines, Iowa 50315. J. O. #1581209.

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**GENERAL SURGEON, OB/GYN and INTERNAL MEDICINE SPECIALISTS** — To join seven-doctor family practice clinic in Cloquet, Minnesota, a community of 12,000 (30,000 service area) located 20 minutes from Duluth-Superior. Clinic facility is located one block from modern, well equipped 77-bed hospital. Cloquet enjoys a stable economy (forest products). Additionally, our community is noted for its excellent school system. First year salary guarantee, paid malpractice, health and disability insurance, vacation and study time. Contact John Turonie, Administrator, Raiter Clinic, Ltd., 417 Skyline Blvd., Cloquet, Minnesota 55720. Telephone 218/879-1271.

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**NEEDED FOR THREE IOWA LOCATIONS** — Emergency Room and Neighborhood Clinic physicians needed for three Iowa locations. Compensation \$70,000-\$100,000 annually. Contact Central Iowa Medical, P.C., P. O. Box 65574, West Des Moines, Iowa 50265 or call 515/223-9378.

**FAMILY PRACTICE** — Opportunity to associate with modern, growing primary care medical group in eastern Iowa. Dynamic group of 6 FP's, 2 Pediatricians, and 2 Internal Medicine physicians. New 30,000 sq. ft. clinic located next to community hospital. Excellent fringes and corporate package. Call 319/264-3258 collect or write Michael Sundall, Muscatine Health Center, 1514 Mulberry Avenue, Muscatine, Iowa 52761.

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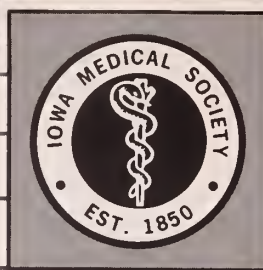
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A Monthly Commentary

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## IN THE PUBLIC INTEREST



### Manpower/Economics, Etc.

**I**N THE past 14 years, the total number of physicians in the United States has increased by 50.3%.

This finding is based on research of the American Medical Association and compiled in its publication, *AMERICAN HEALTH SYSTEM 1984*. The data indicate the average number of physicians for every 100,000 patients has grown from 163 in 1970 to 217 in 1982.

These figures can be examined in two ways. On one hand, they suggest a rosy prognosis for the American patient. More numbers of physicians mean more medical care choices for individuals and families. This numerical growth is producing a competitive environment with pluses and minuses.

On the other side of the chart are questions about the numerical adequacy of the patient market. Are there sufficient numbers of patients to offer economic incentive to both new and experienced practitioners? Will the demand for physician services rise or fall as restrictive cost measures are imposed?

The AMA study notes the average professional expense per physician in 1982 was \$78,400. Between 1973 and 1982, the study said physician expenses increased at an average annual rate of 10.4%. Since 1973 the average physician salary, minus expenses, increased at an annual growth rate of 8.3%.

Even with inflation factors and the growing physician population, the AMA report still notes that key medical and economic factors have not worsened substantially for most physicians. It is of interest the average net income of physicians under 36 years of age, newcomers to practice, had the highest rate of growth for any age group between 1973 and 1982. According to the AMA study, in 1973, physicians in the under 36 age bracket showed \$32,800 as their mean net income. In 1979 aver-

age income figures for this age group climbed to \$64,300, with increases apparent for the next few years.

It appears many parts of the United States need additional physicians. The data indicate Iowa may be such a state. We have 142 physicians for every 100,000 patients. This is well below the national average. Iowa ranks forty-fifth among the states in ratio of physicians providing care to population. The AMA figures are not weighted for any sociologic or demographic characteristics evident in the respective states, i.e., number of elderly citizens.

Interestingly, the *DIRECTORY OF IOWA FAMILY PRACTICE OPPORTUNITIES* issued in July lists 159 communities as saying they need physicians. Fifty-three of these communities say they need more than one physician. Over half of the Iowa communities on this list have populations over 5,000.

As the AMA study demonstrates, physician salaries are not rising as fast as expenses of practice and inflation. The now emerging Medicare Deficit Reduction Act will impose further economic restrictions on health providers.

While the complex issues of physician numbers and economic parity are set forth statistically in this AMA report, the figures presented remain fully open to interpretation and subject to correlation with local circumstances.

It seems Iowa still needs physicians. What must be considered carefully is the selection of a site where the need is well identified.

What is heartening, to be sure, are the AMA statistical findings which show there has been a substantial improvement in the nation's health status over the last two decades. This is the "bottom line" goal we all seek.

October 1984

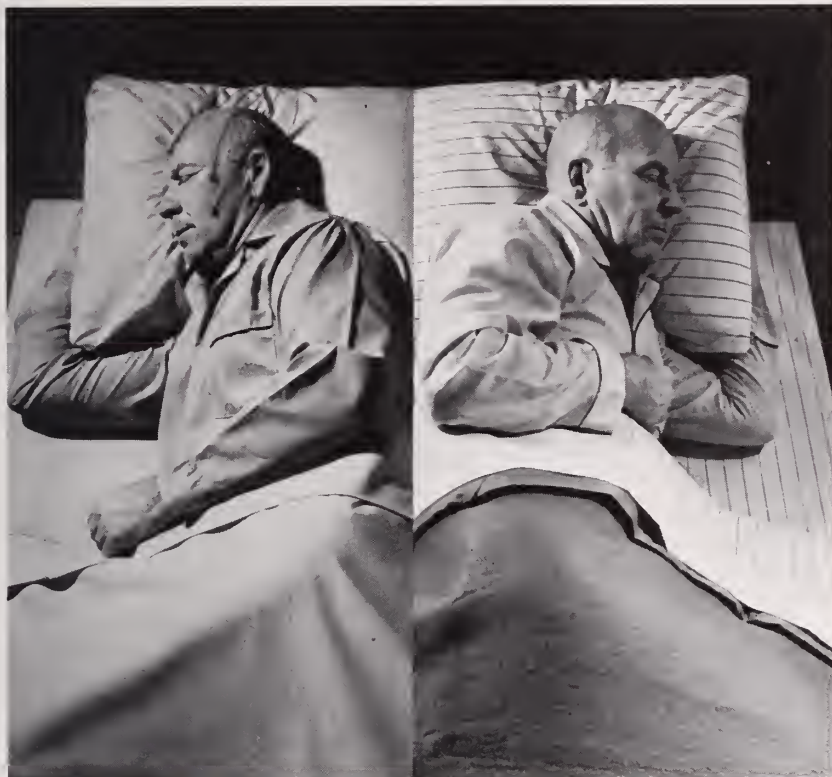
Iowa Medicine





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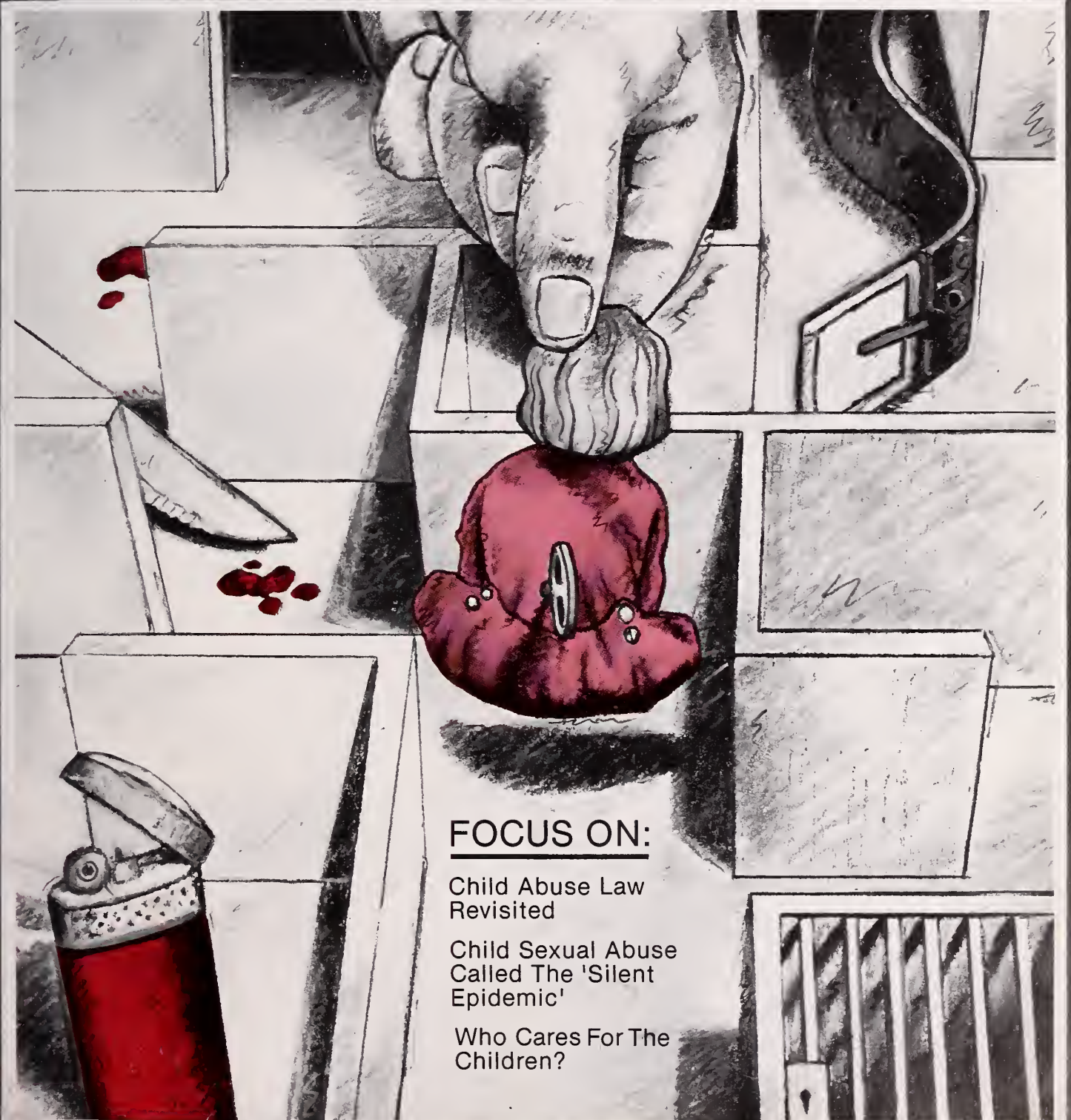
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# Iowa Medicine

Journal of the Iowa Medical Society

## CHILD ABUSE!



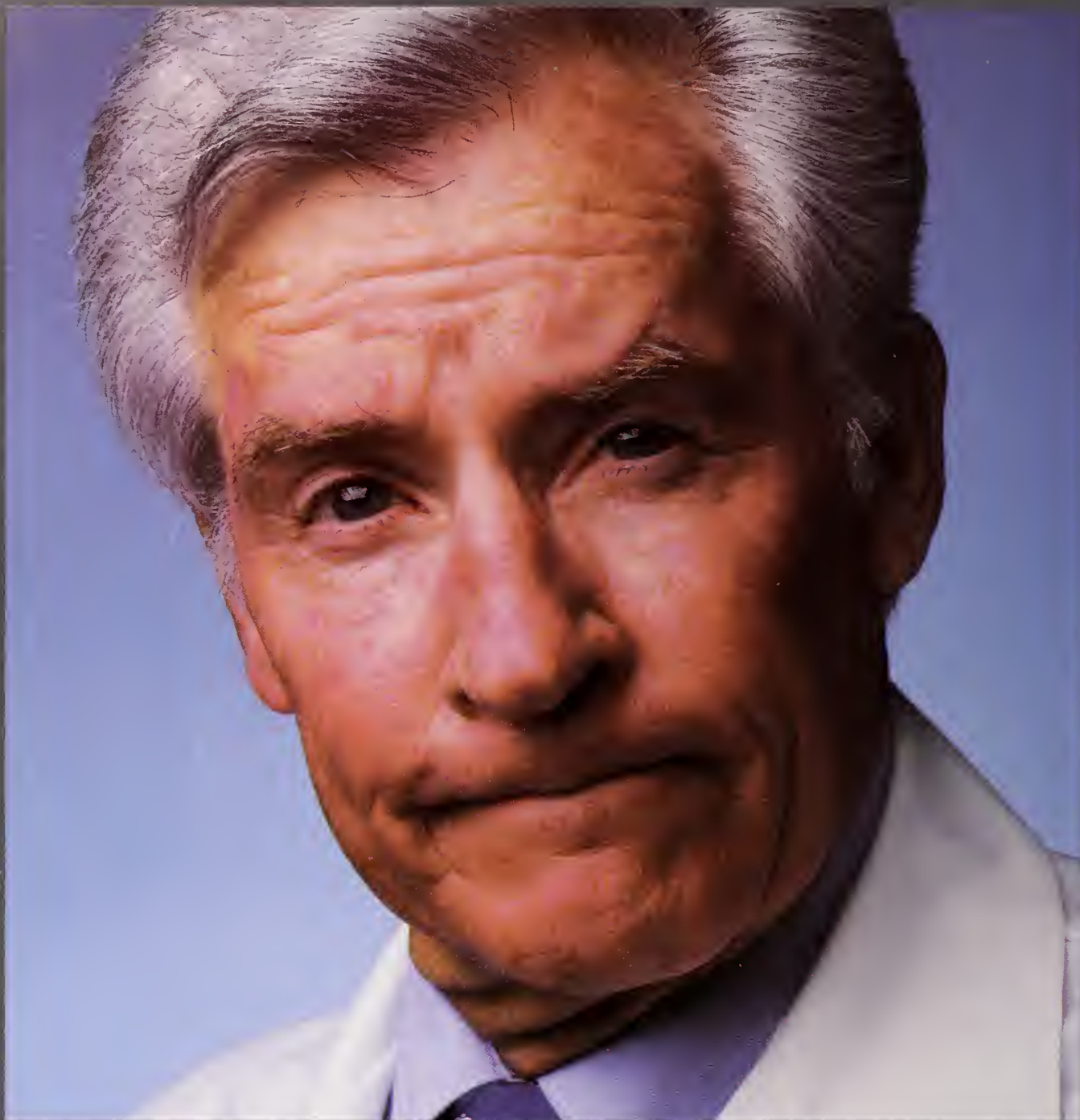
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Child Abuse Law  
Revisited

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Who Cares For The  
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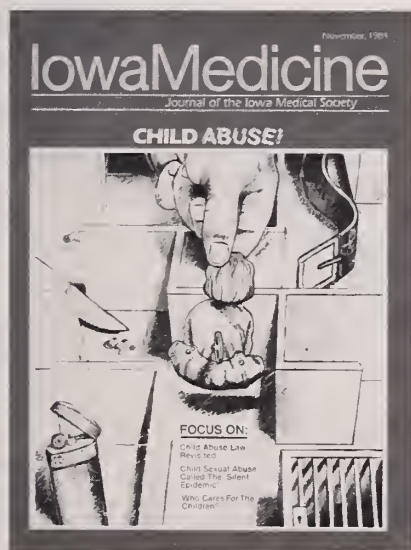
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## ABOUT THE COVER



**ABOUT THE COVER** — Much attention is being focused on the problem of child abuse in its various dimensions. Our cover this month provides a graphic portal to this special November issue of IOWA MEDICINE which is devoted almost entirely to the subject. The magnitude of the press coverage today underscores the need for Iowa physicians to be alert and responsive where situations of child abuse may exist.

IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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Many county societies have routinely met with their legislators to discuss issues and provide information. If your county society has not, why not set up a dinner, lunch or break-

fast meeting for your legislators. Let them know who you are and of your concern for your patients. ESTABLISH CREDIBILITY.

As a contrast, too often legislators do not hear at all from their physician constituents or only at times of crucial votes when the doctor is only a voice over the phone. You are not effective that way.

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*John Tyrrell, M.D.*

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*P.S. Child abuse is an agonizing subject. This special issue provides valuable information. Please share this issue with others after you have read it.*

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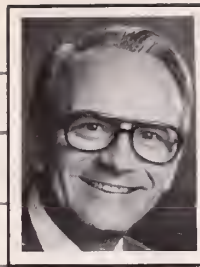
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Marion E. Alberts, M.D.

## COMMENTING EDITORIALY



### WHO CARES FOR THE CHILDREN?

**I**T HAS BEEN ESTIMATED by 1990 there will be 38 million children under the age of 10 years in the United States. This increase of nearly 5 million represents the relatively late entrance of the post-war "baby boom" generation into the role of parenthood. Many of these new parents will find it necessary for both partners to work to maintain the way of life in which they grew up. Therein lies the major problem: *Who will care for the children?*

Figures available about child care today stagger those of us who are professionally concerned with the welfare of children. About 5 million U.S. children under the age of 10 have no caretakers when they come home from school; some 500,000 pre-schoolers under the age of 6 are "latch key" children. Furthermore, reports indicate about 2 million children are in formal licensed day-care centers. More than 5 million children, ages 3-5, attend nursery schools or kindergarten (another form of day-care for many). Uncounted millions of U.S. children are cared for by unlicensed baby sitters in an informal day-by-day manner; many are unqualified and take in children to supplement an income.

Two-job couples are more the rule than the exception, estimated to make up about 26.1 million families in 1983, compared to 18.9 million in 1967. Furthermore, single women in the labor force with children under 6 now number 1.8 million.

The cost of day-care is equally staggering. Estimates range from 25 to nearly 50% of the family income goes to pay for child care. As usual, when a social burden becomes as large as this the cry goes out for more government

aid. The United States is one of the few great nations without a comprehensive national day-care program for children. Social-democratic countries accept nationalized child care as a necessity. Sweden is considered the model. Holland has great concern for child welfare with postage stamp revenue going to that cause. In the U.S. federal spending for day-care has been reduced during the past 2 to 3 years. Private industry, consequently, has taken on the responsibility of providing care for their employees' children. Hospitals have been in the forefront in this endeavor. Also, there are several large commercial enterprises involved in providing day care, e.g., La Petite Academies, Kinder-Care, and others. Churches have seized upon the opportunity to use their Sunday church-school facilities on weekdays for child care, and many smaller local licensed enterprises have entered into the market as well. Some are good; some are bad. Our concerns need to be concentrated on the quality of this child care.

**I**N THE PAST the American way of life has been family oriented. The family was first and foremost in our society. Now, child care outside the home has become a "necessary" evil. Too often there is little concern for the qualifications of the day-care person(s). A telephone call, perhaps a visit, often no references being sought, and the child is left in what Ralph Nader once described as "children's warehouses." Families in desperation leave their children with a person totally unknown to them; and often unqualified to care for them. Child neglect, molestation, abuse, and general poor care are often common faults of such arrangements. I venture to wager that parents have entrusted their children to persons to whom they would not have loaned

## COMMENTING EDITORIALY

(Continued from page 463)

their automobile; their automobile is more valued in a sense than their own offspring!

Let us assume we have a licensed day-care center with qualified personnel. What is the impact on the child left there at an early morning hour and retrieved again in late afternoon? Varying opinions exist depending upon the "specialist" consulted. Some say the child is better off in a well-run care center; others believe families do not need 2 paychecks; too many families place their desires and lifestyle above the welfare of the child. This is an entire discussion topic in itself.

A major problem physicians face is that of the spread of disease in the day-care center, notably infections of the respiratory system and the gastrointestinal tract. Children come from all sorts of home conditions. They are placed together in a more populated environment. The normal carelessness of self-care can only increase the chance of infection.

Disease outbreaks among pre-school children have led epidemiologists to conclude that day-care centers can be significant reservoirs of infectious disease. What can be done? One simple task is often overlooked — hand-washing. Many day-care centers have limited facilities, making it difficult for attendants to wash their hands many times a day. Ideally, an attendant should not touch another child without washing the hands. This has been proved repeatedly in hospital nurseries and pediatric wards. Furthermore, children in diapers should be segregated from the toilet-trained children. Separate attendants should be involved with these 2 groups. Statistics show an added benefit — the attendants themselves will be less likely to contract illnesses.

**T**WO PARTICULAR ILLNESSES are the nemesis of day-care centers. These are hepatitis and serious hemophilus influenza infections. They deserve close attention to prevent epidemics. Sanitary conditions must be demanded by parents. Parents must be concerned with the child-to-staff ratio of the center. Smaller infants are best cared for in a smaller enrollment facility. Parents should note handwashing facilities. The appearance of the attendants (personal cleanliness, attire, attitudes, and attention to self-care details) should be observed. The physical plant (heating, lighting, kitchen facilities, ventilation, sleep facilities) should be noted. The nature of toys and other forms of play-therapy should be assessed. Last but not least, observe the attendants. Do they really love the children to the degree that they will be held and hugged to satisfy their emotional needs.

The children of today are the parents of tomorrow. We must treat them well, so they can learn the meaning of love and respect and raise their own children in a responsible manner. Parents have a right; no, a responsibility to know how their children are being cared for at all hours of the day. They should ask, "How will you treat my child?" After all, the day-care facility is responsible for the child more hours of "awake time" than the parents. Let not the parents and the rest of society overlook the children's needs; their physical well-being, their emotional growth, as well as their need to be a part of the family unit which is still the basic element in our society. — M.E.A.

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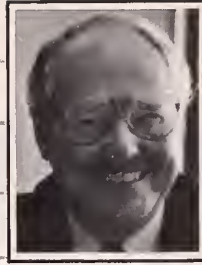
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Michael V. Reagen, Ph.D.

## QUESTIONS AND ANSWERS



### PROTECTING THE CHILD

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*Dr. Reagen, is Commissioner of Human Services for the State of Iowa. The State Department of Human Services, which he heads, has seen the growth of a more positive atmosphere for child abuse reporting. The Commissioner discusses the broader definition of child abuse and the role of the physician.*

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**Much attention has been paid to child abuse, both in the media and the legislature. To what do you attribute this?**

Current interest in child abuse must be attributed to several recent and particularly frightening child abuse cases. These cases are boosting media interest. Now reporters delve into child abuse issues and uncover previously unreported information. The public benefits from this tragic, but important, information.

Legislative interest in child abuse is not new. Since the passage of Iowa's first child abuse law in 1965, interest has been building. Legislative amendments were made in 1978, mandating several classes of professionals to report all suspected physical abuse, sexual abuse and neglect. Since the 1978 mandate, reported cases of suspected child abuse have increased dramatically. Legislators continually monitor the increases in child abuse reporting. They express great interest in the relationship between child abuse and other children's problems requiring treatment. In 1982, the legislature established the Iowa Child Abuse Prevention Program in response to its concern.

The increase in media attention and the resulting public concern about child abuse create a climate in which legislators and other policy

makers can focus increased attention on the problem.

**Can you summarize the 1984 legislation on child abuse?**

In 1984, 2 major bills were enacted dealing with child abuse. The first is House File 2302. It amends the definition of child abuse to include the sexual exploitation of children and child prostitution. These new definitions address the issues of child pornography and child prostitution. The change allows the Department of Human Services (DHS) to investigate and substantiate cases falling into these categories.

The second major bill is Senate File 2293. This bill revised sections of the Juvenile Code, Chapter 232, Code of Iowa, that deal with child abuse reporting, investigation and rehabilitation. The new provisions include:

a. Mandatory reporters will make a report of child abuse within 24 hours.

b. The category of mandatory reporters is expanded to include self-employed social workers and employers or operators of licensed child care centers, registered group day care homes, and registered family day care homes.

c. The Department of Human Services may request child abuse information from any persons believed to have knowledge of a child abuse case. Mandatory reporters will cooperate and assist in investigations upon the request of the DHS.

d. The temporary removal procedures are expanded to include removal, by a peace officer, from a child day care facility when certain conditions exist.

e. A physician treating a child may keep a child in custody without a court order and without parental, guardian, or custodial consent when certain conditions exist.

f. Information from individuals providing

*(Please turn to page 487)*

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# Child Abuse and Neglect: The Physician's Role

DAVID P. SCHOR, M.D.

Iowa City, Iowa

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*Physician reporting of suspected child abuse lags behind others who are required to submit such information. The presumed reasons for this are set forth. Signs of child maltreatment must be recognized and proper attention given. The author spells out what needs to be done.*

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**T**HE ABUSE AND NEGLECT of children is a serious health problem. Although precise numbers are difficult to come by, population-based studies estimate the prevalence of significant injury or disease brought about by physical abuse or neglect at 1 to 3% of the child population. Recent studies of child sexual abuse have found rates of 1 in 3 for females, 1 in 10 for males. The death count from child maltreatment now exceeds that for childhood leukemia.

Reports of child maltreatment have shown significant annual increases for several years. In 1982, the last year for which detailed figures

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The author is assistant professor, Division of Developmental Disabilities, Department of Pediatrics, The University of Iowa, and chairman, Child Abuse or Neglect Subcommittee, University of Iowa Hospitals and Clinics.

exist, there were 929,310 official reports concerning over 1.3 million children. This represents an increase of nearly 125% since 1976. There were over 4,000 deaths. In Iowa during the same approximate interval the number of reports increased about 14-fold. Of course not all abused children are reported and not all reports represent episodes of significant harm. Nevertheless the increase in reporting appears to confirm a greater individual willingness to bring probable or possible situations of child maltreatment to the attention of state officials. Greater public awareness of the signs, symptoms and consequences of such maltreatment contributes to this increase.

Physicians have been leaders in the delineation and refinement of "the battered-child syndrome" ever since the publication of a 1962 article of the same name by Dr. Kempe and his colleagues. This produced a massive outpouring of commentary and action by the media, legislatures and the public. (The JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION recently reprinted this article along with a commentary; see the reference list at the end of this article.) Kempe and colleagues documented 749 abuse cases reported to hospitals and district attorneys; 10% died and 15% had permanent brain damage. The article led to the drafting of a model law; within 4 years nearly all states enacted mandatory reporting laws designed to initiate child protective services in cases of suspected child maltreatment.

*(Please turn to next page)*

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT  
SCIENTIFIC PRESENTATION FOR THE MONTH OF NOVEMBER 1984

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## CHILD ABUSE AND NEGLECT: THE PHYSICIAN'S ROLE

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### STATE/FEDERAL RESPONSIBILITY

Major responsibility for this concern has always been vested in the states. The Iowa General Assembly passed its original law in 1965. It made substantial changes in the law in 1974 and less sweeping revisions subsequently. Federal legislative and executive activities have significantly influenced child protective service programs. For example, the Child Abuse Prevention and Treatment Act of 1974, the Schroeder-Mondale Act, established the National Center for the Prevention of Child Abuse and Neglect. It initiated funding for research, demonstration projects and clearing-house activities. Recent decisions within the executive branch have curtailed activities in some of these areas (forcing, for example, the closing of all 10 regional Children, Youth and Families Resource Centers).

The Iowa law mandates the reporting of suspected maltreatment, provides penalties for failing to report, offers immunity from legal actions associated with making a report, and

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*"The situation in Iowa generally mirrors that of the nation as a whole. However, Iowa medical practitioners initiate relatively fewer reports than do their colleagues nationwide."*

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defines the reportable conditions. Initial mandatory reporting laws were directed at physicians, but legislators have increased the class of mandatory reporters in part because of a perception that physicians are generally reluctant reporters. Other professional groups (school, social services, and law enforcement personnel) are now the source of over three-quarters of the reports made by "mandatory reporters."

### MEDICAL PRACTITIONER REPORTING

The situation in Iowa generally mirrors that of the nation as a whole. However, Iowa medical practitioners initiate relatively fewer reports than do their colleagues nationwide. Mandatory reporters collectively initiate 41% of Iowa reports compared to the 48% initiated

by these same professionals (medical practitioners and personnel from schools, social services agencies, and law enforcement) in the country as a whole. Iowa medical practitioners make only 6.6% of total reports compared to the 11% made by their peers throughout the country. Several explanations are available for the generally low rate of physician reporting:

1) *Many physicians, especially those out of medical school more than 10 years, have not been trained* in subjects pertinent to child abuse. This includes not only the recognition of medical signs and symptoms suggesting abuse, but also a sound knowledge of family dynamics, refinement of interviewing skills through videotape and other "feedback" exercises, and familiarity with the professional roles of psychologists, social service workers, and court personnel in child abuse investigations.

2) *Many physicians are unaware of the legal requirement to report* suspected abuse. Some believe mistakenly they must report only those cases where they have ruled out other possible causes for the injuries confronting them, while others believe (again mistakenly) they must identify a perpetrator, a person responsible for the injury or neglect.

3) *Physicians are generally unacquainted with recent studies documenting serious long-term effects* on children's development and personality arising out of chronic neglect or even apparently minor inflicted injuries. (The report by Schor and Holmes cited in the references documents a case of partial recovery from severe child neglect and abuse.)

4) *Physicians are concerned about the potential impact of reporting on their practice.* They perceive an increased risk of an impaired relationship with the family with each report or a recurring threat of malpractice litigation should they report without "proof" of abuse or neglect. Iowa law, however, protects all who make a report unless it can be proved the report-maker knew the information provided was false. In addition, many families continue to obtain health care from physicians who make such reports; the important variable in these situations appears to be the quality of the doctor-patient relationship prior to the reporting, as perceived by the parent.

5) *Physicians are unaware of the legal risks they expose themselves to if they fail to report cases where they "reasonably believe," or should*



have believed, child maltreatment was occurring. Both criminal penalty and civil liability await the non-reporting physician. (See the article by Gerald Solomons and Harold Young cited at the end of this article.)

6) *Physicians who become involved in child abuse cases often find both the financial and emotional compensations are inadequate for their investment. The prospect of becoming involved in court proceedings through depositions or in-court testifying is a daunting one for most physicians. Preparation can relieve some of the stress, and physicians may want to consult guides such as those in the texts of Ellerstein and of Kempe and Helfer (see references following).*

7) *Physicians have reported distress and discouragement in the response of community service agencies and the courts to their prior reports of abuse or neglect. Recent steps of the Iowa Department of Human Services to facilitate their communication with physicians and other mandatory reporters and to review the status of child protective services it provides in several areas offer hope that some of these difficulties will be ameliorated.*

#### ROLE OF THE PHYSICIAN

It is the role of the physician to *recognize* signs and symptoms of child maltreatment — to include it in the differential diagnosis when appropriate — as well as to *record* the findings in carefully written notes and through photographs, x-rays and lab studies as appropriate; to *report* cases as the law provides, to *recommend* appropriate treatment services, to *reduce* the stresses which may be associated with medical problems to a minimum where possible, and to *review* the potential leadership roles in child advocacy he or she can take as a member held in high esteem by the community.

Remaining portions of this article will provide information to assist the physician in recognizing possible cases of child maltreatment. It is up to the individual practitioner, however, to expand on this information through independent reading, viewing of audio-visual material, and discussion-consultation with colleagues. Within the area of physical diagnosis there are various teaching materials available. The practitioner, perhaps with various professional organizations, may also wish to address other areas of need such as increased awareness of the role of other professionals in the

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## CHILD ABUSE AND NEGLECT: THE PHYSICIAN'S ROLE

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prevention, detection, and management of child maltreatment situations.

### *Including Child Maltreatment in the Differential Diagnosis*

There are many signs of child maltreatment, some of which are described here. Few of the following are absolutely diagnostic of abuse or neglect. Some of them can have other explanations accounting for their appearing in the office of the physician. If there are a number of these signs, or if they occur repeatedly, the likelihood of diagnosable maltreatment increases sharply. However, as already noted, it is generally not in the best interest of either the child or the physician to wait for "proof" of maltreatment before reporting.

The child's appearance, the child's behavior, and the parent's behavior can offer reasons to consider physical abuse, neglect, or sexual abuse. Physical abuse should be considered in children with unusual bruises, welts, burns or

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*Parents who were abused as children, or subjected to harsh discipline, more frequently utilize such practices on their own children."*

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fractures; bite marks; or frequent injuries explained as "accidental." The child with bruises or fractures of differing ages whose caregiver gives an adequate story for only one injurious event has likely been abused. The child who reports being injured by his or her parents is rarely lying. The child who is unpleasant, demanding, or aggressive may be the victim of abuse; so, too, may be the excessively passive and withdrawn child, or one with frequent school absences, one who appears frightened of his or her parents, or one who is indiscriminately friendly to adults outside the home. Parents who were abused as children, or subjected to harsh discipline, more frequently utilize such practices on their own children.

Key findings likely to require a physician report to the Department of Human Services

*(Please turn to page 471)*

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include a parental description of the mechanism of injury which does not fit the medical evidence; the apparent inability by the parent to provide any explanation at all; an attempt by the parent to conceal the injury; or the failure by the parent to seek appropriate medical care.

#### GENERAL NEGLECT

Neglect becomes part of the differential when children present who lack the basics of well-child care including immunizations and periodic medical evaluations. State law defines neglect as failing to provide appropriate medical care and other necessities such as food and clothing when the parents are either able to afford such care or have been given the means to obtain it. Thus not every under-clothed child would be considered a neglected one under the law; however, parents receiving assistance to obtain health care for their asthmatic child cannot use as a defense against a neglect charge the plea that they could not afford the medication!

Children with venereal disease have been sexually abused; there is at present no convincing evidence that sexually transmitted diseases can be acquired by children through other modes. However, nearly all sexually abused children would lack any medical evidence for abuse upon timely evaluation, so information to support a diagnosis of sexual abuse generally should be sought elsewhere. Frequently the sexually abused child becomes withdrawn and relates poorly with other children. The parents may appear over-protective or jealous of the child. Current research suggests that most sexually abused children are girls and that the majority of perpetrators are family members or well-known to the child. The reports by young children must be taken seriously: the view that their verbal reports, drawings, and acting out of events with "anatomically correct" dolls represents the effects of cable TV shows or a one-time intrusion into the parental bedroom lacks credence.

#### SUMMARY

The roots of child maltreatment are complex and intertwined. We have the greatest understanding of the antecedents in situations involving physical abuse. Often there is a caregiver with a heightened potential for abuse, a person who was perhaps abused as a child or who lacks trust, prefers social isolation, and

## CHILD ABUSE AND NEGLECT: THE PHYSICIAN'S ROLE

has unrealistic expectations for children's behavior. Then the child may exhibit behaviors viewed by the caregiver as unacceptable. A third component raising the likelihood of abuse is the presence of other chronic or acute stresses—financial, interpersonal, situational. Finally, the family is immersed in a culture in which corporal punishment is acceptable or encouraged, where physical action frequently gets results.

Our understanding of antecedents in other forms of child maltreatment is less secure. While treatment and protective services "after the fact" should be encouraged for all types of child abuse, it would also be appropriate to consider the prevention model here as for other aspects of health care. We are not yet in agreement as a society on the services which should be made available to all who desire them. As we debate the relative roles of state and private agencies in providing resources to individuals and families, we must consider the potential impact of our decisions on those children who require our protection.

#### FURTHER INFORMATION

The physician wishing further information and training in the recognition of child abuse, as well as other aspects of child maltreatment, should consider the following resources.

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# Child Sexual Abuse Called Silent Epidemic

MICHAEL E. ABRAMS, M.D.

Des Moines, Iowa

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*This heartrending problem needs the full and compassionate understanding of all Iowans — particularly Iowa physicians. The magnitude of the problem is described here with significant additional information on how those caring for child sexual abuse victims can do so most effectively. The medical profession must provide leadership in providing public education.*

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**S**EXUAL ABUSE of children is a silent epidemic. It is a mind-boggling phenomenon to responsible adults. And it is a situation frequently hidden from treating physicians. Society is just now beginning to come to grips with the problem and its excruciating dimensions: *How and why does it occur? How can it be dealt with? How can it be prevented?*

The medical profession must provide leadership in society's awareness movement. To this end, the Iowa Medical Society is seeking to help physicians understand the factors associated with child abuse and sexual abuse.

This paper will cover four main components of child sexual abuse: 1) *awareness and resources available to physicians*; 2) *early symptoms and signs*

*of child sexual abuse*; 3) *assessment and management techniques*, and 4) *legal, forensic and testifying issues*.

Despite various studies the actual incidence of child sexual abuse is not fully known. The Department of Human Services reports 1 in 4 females will be sexually victimized by age 18. One of 10 boys will be similarly mistreated by age 18. Iowa Child Protective Services estimates possibly 1 of 7 boys are unknown victims because of the reporting "taboo" on the part of the victim, parent or health provider. Experts estimate up to 250,000 cases of intra-family sexual abuse occur annually in the U.S. Another estimated 250,000 cases of child abuse and extra-family sexual abuse occur annually, considering only 30% of the cases are reported.<sup>1, 2</sup> Cantwell reports incidence of 1:1000 total population.<sup>3</sup> Khan and Sexton report this age distribution: 53%, under 6 years; 29%, 6-9 years, and 18%, 10-12 years.<sup>4</sup> DeJong, *et al*, reported 14% of their sexual assault victims were males under 18 years.<sup>3</sup>

Statistics from the Iowa Department of Human Services show 106,440 child abuse cases reported from 1979 to 1983 with 21,415 substantiated. There were 11,194 sexual abuse cases reported in this period with 1,220 substantiated. The years 1980 and 1981 are excluded in the sexual abuse reporting. However, the number of reports has doubled in 5 years.

## PHYSICIAN AWARENESS AND EDUCATION

The level of physician awareness on this topic is spotty at best. Few medical schools offer specific courses, lectures or training on child sexual abuse. Residency programs in

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The author is director of ambulatory care services at Broadlawn Medical Center, Des Moines, Iowa. He is a member of the Adult and Child Sexual Assault Advisory Committee of the Iowa State Department of Health and medical advisor to the Polk County Sexual Assault and Violent Crime Center. Dr. Abrams is chairman of the Iowa Medical Society Committee on Emergency Medical Services.

primary care training have yet to adopt a curriculum component on adult/child management of sexual abuse.

Between 175 and 250 cases of sexual abuse/assault are seen annually at Broadlawns Medical Center. All family practice residents at Broadlawns are supervised as they assume responsibility for making sexual assault assessments. Sexual assault management training is required before any family practice resident

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### *Third Edition Available*

*The third edition of the Emergency Treatment of Sexual Abuse Victims, a guide published by the Iowa State Department of Health, will be available in early 1985.*

*This document provides a detailed explanation of the legal aspects of sexual abuse reporting as well as guidance in examining and treating sexually abused persons.*

*The book is recommended to Iowa physicians by the Iowa Medical Society Committees on Maternal and Child Health and Emergency Medical Services. Requests for copies of the book may be submitted either to the Iowa Medical Society or the Iowa State Department of Health.*

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assumes on-call duties in the Emergency Department.

Responding to public concern, the Iowa General Assembly passed a law in 1981 directing the State Department of Health to become involved (1) in reimbursing the costs of adult sexual assault examinations; (2) in the collection of biological evidence, and (3) in the prevention/treatment/follow-up of sexually transmitted diseases. Pursuant to this, the Health Department formed an advisory council to prepare a protocol for use by physicians, nurses and hospital emergency departments in evaluating sexual assault patients.

A forthcoming third edition of the sexual assault protocol will cover child assaults and abuse evaluation procedures. It will include a legal interpretation of child sexual abuse and child abuse. It will discuss the team management concept which includes police, physician, nurse, sexual assault counselor, Protec-

tive Service worker and attorney. A chapter is provided on testifying. The new edition of the exam protocol will be sent to all Iowa hospital emergency departments.

### WHAT IS CHILD SEXUAL ABUSE?

Kempe defines sexual abuse as the involvement of dependent, developmentally immature children and adolescents in sexual activities that they do not fully comprehend, to which they are unable to give informed consent, or that violate the social taboos of family roles.<sup>4</sup>

Sarles expands on this to include sexual misuse and victimization of children and adolescents by exposure to sexual stimuli inappropriate for the child's age and level of development.<sup>5</sup> Sexual abuse includes a broad range of activity from subtle sexual comments, to overt touching, fondling, rectal intercourse, fellatio, vaginal intercourse, cunnilingus, fomite (finger) orifice penetration with perpetrator masturbation. Adolescent and child prostitution, pornography or any activity exploiting the victim sexually by the abusing, or powerful adult or older child, can be considered sexual abuse.

Physicians are mandatory reporters of child abuse (which includes sexual abuse) under the Iowa Code. When physicians suspect or have a differential diagnosis of child sexual abuse, this is to be reported to Child Protective Services for assessment and investigation. An explanation of the Iowa Sexual Abuse and Incest Code is contained in the manual of the State Health Department.

Theodore D. Scurletis, M.D., is associated with the State Health Department and is chairperson of the advisory council. He is a resource physician in Iowa on child sexual assault.

### EARLY DETECTION

Early detection of child sexual abuse is most important in dealing with the physical and psychological trauma of sexually abused children. Primary care physicians (family physicians, pediatricians, emergency physicians, etc.) are key in the early detection process. Knowing the diagnostic criteria, these physicians must intervene promptly and conscientiously when abuse is suspected. Awareness to the potential for abuse must be maintained on a regular basis.

*(Please turn to page 478)*



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## ANATOMICAL DOLLS USED IN SEXUAL ABUSE EXAMS

Increasing use is being made of anatomically correct dolls to help children describe how they have been sexually abused. These dolls are available from several manufacturers and sets vary in cost from \$75 to about \$150.

In these photos, Teresa Shields, R.N., of the Broadlawns Medical Center, Des Moines, holds the dolls used at that facility. Information on the costs and specifications of the dolls may be obtained by contacting Michael Abrams, M.D., at Broadlawns.



When mothers, babysitters, or social workers bring a child to the physician for a sexual assault and/or incest exam, it is less difficult to make a reasonably accurate assessment. However, sexual abuse may not occur to physicians when parents present their child with symptoms of vaginitis, urethritis, cystitis, vaginal discharge, genital itching or swelling, erythema, abdominal pain, insomnia, repeated small trauma or penile lesions. In assessing the history associated with these symptoms, the physician should be alert to abuse possibilities. Children presented with these conditions by babysitters, neighbors, stepfathers, uncles, etc., are in the "red flag" category. Vaginal exams are indicated.

Sarles<sup>2</sup> and Thomas<sup>7</sup> separate early detection symptoms and signs of sexual abuse into medical indicators and behavioral indicators on the following basis:

**Medical Indicators:** 1) genital and anal trauma; 2) presence of sexually transmitted diseases: gonorrhea, syphilis, trichomonas, condyloma accuminatum, Herpes, con-

tagiosum moscullosum and chlamydia. (Our youngest patient with GC cervicitis was 15 months old.) 3) Rectal, vaginal bleeding without obvious cause; 4) urethritis, cystitis, vaginitis, vaginal discharge, vaginal itching, pruritis, swollen inguinal gland, genital discomfort, reoccurring enuresis; 5) dysuria, penile angioedematous swelling, penile discharge; 6) pregnancy (Our 2 youngest cases were sisters, 12 and 13.).

When pediatric patients present with any of these symptoms the family living situation and/or behavioral changes should be assessed. Sexual abuse must be included in the differential diagnosis. Again, the primary care physician is a key individual in helping the abused child deal with emotional and physical trauma.

#### **Behavioral and Somatization Indicators:**

1) Recurrent lower abdominal pain, breast or chest pain, headaches.

2) Recurrent regressive behavior (earlier outgrown behaviors); bed-wetting, thumbsucking, encopresis; eating disorders.

3) Sudden onset phobias, fears of people, places or situations.

4) Runaway behavior (one of the most common in adolescent females).

5) Emergence of inappropriate, aggressive sexual activities with peers, dolls, pets; seductive behavior toward adults; using new terminology, e.g., humping, love game, Daddy, love school, etc.

6) Among those 10 years and older, emergence of drug and alcohol use.

7) Rapid personality changes, isolation, with a decrease in school, home and family performance.

8) Suicidal attempts, ideation and self mutilation, plus increase in "accident" prone behavior.

Other emotional and physical findings may be present. The preceding are not offered as all inclusive.

#### **ASSESSMENT**

It is essential to have an established procedure and protocol for all sexual assault exams. Patients may present in varied situations; this can confuse and frustrate the busy and unprepared practitioner. Proper time and examination space are essential for a thorough exam. Physical findings and biological specimens are extremely important for legal reasons. Broadlawns Medical Center requires all nursing staff

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#### **Additional Useful Materials**

*In addition to the valuable information contained in this article, the author has helped in the preparation of various documents and items used by the Broadlawns Medical Center in Des Moines. These include:*

- *Medical Protocol for Examining and Managing Patients of Sexual Assault (Child-Adult)*
- *Clinic/Patient Encounter Form Contained in the Medical Record*
- *Emergency Department Child-Adult Sexual Assault Exam Form (Alternative to Preceding Form)*
- *Biological Evidence Form — Interpretation for Court and Medical Testimony*
- *Bibliography Relating to Presentation of Medical Testimony*
- *Scientific Bibliography*

*Physicians interested in obtaining these materials are invited to contact Michael Abrams, M.D., Broadlawns Medical Center, 18th and Hickman Road, Des Moines, Iowa 50314.*

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to be trained in sexual assault examinations and in counseling children and parents. The nurse is a vital member of the exam team. She plays a key role in preparing the patient for examination. The Sexual Assault Counselor and/or the Child Protective Service Worker are also present.

A prescheduled examination is often desirable. The evaluation of young patients who have not been abused recently, dating back even 6-12 months, requires adroit and conscientious attention by the physician. Child Protective Services may bring a child in for a "foster family exam." During this exam the possibility of sexual abuse may surface. The physician needs a protocol to follow so pertinent findings are not missed.

**C**HILDREN are usually very honest and will talk about situations openly to the nurse and the physician. This is more likely when trust, receptiveness and a genuine helping attitude are demonstrated. Parents are more apt to be helpful in this kind of environment. A training film by Ross Laboratories, "Suffer the Children . . . Silence No More," is available from the Iowa Chapter, American Academy of Pediatrics.

Separate nurse and physician protocols are followed in all sexual abuse exams at Broadlawns. This approach has been effective in our Polk County Court system. Use is made of anatomical correct dolls (see pictures) during the exam to build rapport with the young patient and to help determine the nature of the abuse. Photographs are taken of all abnormal findings.

Documentation of abnormal findings is essential. This is especially true in the skin and urogenital area. All female patients must have a vaginal exam with introitus measurement<sup>12</sup> (See Figure 1). Gonorrhea cultures, sperm, acid phosphatase and ABH antigen are the key laboratory specimens to collect. Specimen collection and value will depend on the time of the abuse and the type of abuse. Not all cases need the specimens noted here.

Remember children may not give the entire account of what happened. This underscores the importance of specimen collection if there are inconsistencies in the history. The most difficult part of the female exam is the vaginal inspection and collection of specimens. The

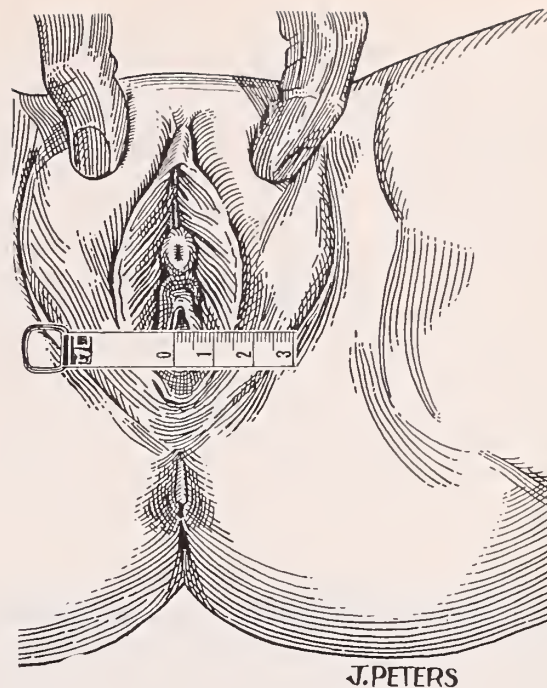


Figure 1

physician may have limited opportunity before the patient refuses further examination. Referral of a patient to a physician or facility where sexual abuse exams are done more frequently can be beneficial.

(Please turn to page 480)

### **Child Sexual Abuse Introitus Exam Technique**

- **All children with suspected or obvious sexual abuse require uro-genital examination.**
- **The vaginal introitus and vulva should be described in appearance, size, (gaping, relaxed, admits 1 or 2 fingers) and describe swelling, erythema, etc.**
- **Pre-pubescent vaginal introitus varies 2-4 mm. and 4 mm. or more is indicative of vaginal penetration and therefore potential sexual abuse.**
- **All pediatric patients with symptoms of vaginitis, dysuria, perineal itching-pain-swelling, and uro-genital discomfort need a uro-genital exam, and sexual abuse needs to be part of Differential Diagnosis.**

The physician is seldom called to testify when a sexual assault exam protocol is followed and a thorough report is prepared. The evidence speaks for itself and the Child Protective Services investigation team can furnish the explanation. It is especially important to have a well documented vaginal exam in female patients.

If a physician must testify, the history should be well in mind; there should be clear understanding of acid phosphatase (AcP), sperm findings and the physician needs to review basic, normal urogenital anatomy. Broadlawns has a resource testifying manual; and we have a normal and abnormal value curve for

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*Physicians need to be more knowledgeable about the early symptoms and signs of child sexual abuse. Examination procedures need to be understood thoroughly and followed carefully. The medical profession needs to exert leadership at the local and state levels in addressing this agonizing problem.*

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sperm and acid phosphatase in relation to time of intercourse in over 500 cases corresponding to the forensic literature on semen and acid phosphatase.<sup>13-16</sup> Males and females all produce acid phosphatase secretions in the vagina, rectum, mouth and seminal secretions. Acid phosphatase value in these orifices vary from 0.1 to 20 International Units in children and adults. When AcP values are above 50 IU and certainly above 100 IU it means the presence of male perpetrator acid phosphatase (seminal) secretions. In questionable cases, acid phosphatase, by laboratory testing, can be separated into male and female components. ABH secretor antigen and pubic hairs are collected for evidence, but in the experience of the

author these are rarely used in court proceedings.

The court process is often threatening to physicians who have never testified. Depositions, grand jury hearings and a jury trial are often very adversarial. The physician witness should remain objective and unbiased. The truth should be explained as objectively and simply as possible. Do not bring up concepts you cannot easily explain. The prosecuting attorney should be consulted on the issues which need particular attention.

The information of the testifying physician is critical in helping the patient. Any practitioner not experienced in providing testimony should confer with colleagues more familiar with such findings, lab values and abuse issues. Full knowledge of the vaginal exam with understanding of normal and abnormal hymen and introitus findings can be of substantial value to the Child Protective Services, the prosecuting attorney and the patient.

#### SUMMARY

Be mindful that child sexual abuse is a hidden epidemic in our state and nation. Physicians must become more knowledgeable in the early symptoms and signs. Sexual assault examination procedures need to be understood and followed. Contact with the Child Protective Services should be made when necessary. Extra training should be taken, if possible, so expertise can be developed in dealing with this problem.

Physicians should support their Iowa Medical Society, their school systems, their community and regional agencies to encourage and support sexual abuse prevention programs.<sup>17, 18</sup>

#### REFERENCES

The references noted in this article are available on request either from the author or the editors of IOWA MEDICINE.

#### ACKNOWLEDGEMENTS

The assistance of the following persons is acknowledged in the preparation of this article and the associated materials: Teresa Shields, R.N., Mike Adams, John Paul Peters, Terry Taylor and Charles Hughes, all of whom are associated with Broadlawns Medical Center.



# The Iowa Child Abuse Law Revisited

HAROLD YOUNG, J.D.

Des Moines, Iowa

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*Changes in Iowa law covering child abuse reporting have produced large numbers of such reports. In 1983 nearly 15,000 cases were reported. Legal consequences associated with failure to report make it extremely important for Iowa physicians and other 'mandatory reporters' to be familiar with the statutory requirements.*

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PREVIOUS REPORTS in IOWA MEDICINE have discussed early considerations of the Iowa child abuse law. This article is an update and current analysis. An outline of the original act precedes a discussion of the substantial amendments made to the law in 1974 and 1978 by the Iowa General Assembly. The impact of these amendments will be discussed and will be followed by a consideration of the more important issue. The first child abuse law contained civil and criminal penalties for failure to make a required child abuse report. The original sanctions have not been changed. These reporting requirements now are solidly in place and gaining court precedence, and they carry significant potential liability for the medical practitioner.

The author is an assistant attorney general for the State of Iowa. He directs the criminal prosecution division of the Attorney General's Office. His prior articles in this area of interest. *The Battered Child*, JOURNAL OF THE IOWA MEDICAL SOCIETY, Vol. LXIV, No. 10, p. 438; *Malpractice and Child Abuse*, JOURNAL OF THE IOWA MEDICAL SOCIETY, Vol. LXVIII, No. 7, p. 239 (co-authored with Gerald Solomons, M.D.).

## THE ORIGINAL ACT

Iowa's first child abuse act was passed in 1965 as part of a nationwide surge to adopt laws to protect children. Prior to 1961 child abuse legislation was unknown in this country; by 1967 every state in the union and 3 territories had passed child abuse reporting laws. The impetus for this movement is generally credited to Kempe and Helfer for their pioneering work in the field of child abuse and their identification of the "battered child syndrome."

The intense countrywide interest in this issue caused most of the state laws to be very similar. The common underlying goal was to provide a protective response system for children, generally through the state social welfare agency. More important to this discussion, however, is the provision of a mandatory reporting system for children suspected of being abused.

## THE REPORTING PROVISIONS

The original Iowa law mandated all "health practitioners" to make a child abuse report when they examined, attended or treated a child who was reasonably believed to have suffered a physical injury as a result of the act or omission of the parent or guardian.

Penalties were provided in the Iowa law for failing to make a report when required to do so. A misdemeanor crime (\$100 fine or 30 days in jail) was authorized to be charged against a mandatory reporter who failed or refused to initiate the required report. Additionally, the original act created a civil liability answerable

in a malpractice action for damages; one which potentially carries the most onerous enforcement penalty, as discussed later in this article.

The 1965 Iowa law also included a blanket immunity provision for persons who did make a child abuse report whether they were medical personnel, required to report under the law, or volunteers who came forward without legal necessity. The statute defined this latter group (all persons other than health practitioners) as "permissive reporters." The immunity proviso essentially barred any libel or slander action against any person who made a child abuse report in good faith.

#### THE 1974 AMENDMENT

Nine years after its original enactment the Iowa child abuse law was amended to broaden the scope of the reporting provisions by substantially expanding the class of persons required to make a report. This subsequent legislation recognized that many other professional groups have regular contact with children and should be included as mandatory reporters. Social workers, psychologists,

teachers, day care workers, mental health center personnel and police officers were added to the mandated reporter class under the law.

No changes were made at this time in the definition of child abuse (physical abuse only), nor to the penalties or immunities provisions.

TABLE I  
IOWA CHILD ABUSE REPORTS

Years	Average Reports Per Year
1965	Uncounted few
1965 to 1973	437
1974 to 1977	1,635 per year
1978 to 1983	12,500 per year

#### THE 1978 AMENDMENT

As the Iowa child abuse law proceeded into its second decade; as more reports were received and investigations conducted, and as research in the field began in earnest, it became clear that children were being abused by means not envisioned in 1965. Child abuse investigators in every state were finding that parents, in addition to physically harming their children, also molested them in a sexual manner.

The 1978 amendment responded to the increasing documentation of a phenomenon which would have been rejected as unthinkable 10 years earlier. Reflected in this more recent legislative change was the realization that child sexual abuse is rampant and needs to be included under the protective umbrella of the child abuse law. The legal definition of child abuse was thus expanded to encompass sexual abuse as a required subject for mandatory reporting.

Additional expansion was included in this amendment. During the course of investigations in the preceding 13 years, many cases revealed a lack of basic care for children in the family home. To meet this finding the legislature further broadened the definition of abuse to include the failure "to provide for the adequate food, shelter, clothing or other care necessary for the child's health and welfare."

#### IMPACT OF AMENDMENTS ON REPORTING

A growing recognition of child abuse during this period has contributed to an ever increas-

(Please turn to page 483)

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ing number of reports. This was a predictable effect of these changes in the law. The 1974 amendment enlarged the mandated reporter class (*who must report*) and the amendment of 1978 enlarged the definition of abuse (*what must be reported*). The obvious net result was more reporters making more reports.

Statistics from the Iowa Department of Human Services reveal that child abuse reports received in this state grew slowly from an uncounted handful in 1965 to a total of 437 reports made in 1973; an average of approximately 180 reports per year over the period. In the four years after the first amendment, 1974-1977, this average grew to 1,635 cases per year. Since the second amendment, from 1978 through 1983, the average number of child abuse reports has increased to 12,500 per year — with nearly 15,000 cases reported in 1983.

#### EFFECTS OF NOT REPORTING

As noted in the introduction, the original act contained penalties for failing to make a required report. This part of the statute has remained unchanged. The simple misdemeanor for failing to report is no worse than a speeding ticket. But the civil liability imposed is potentially great. The law states: *Any person, official, agency or institution required to report a suspected case of child abuse who knowingly fails to do so is civilly liable for the damages proximately caused by such failure.*

What is becoming a classic lawsuit is the scenario where a child is presented for examination or treatment. The child exhibits or describes evidence of abuse. The medical practitioner, now well versed in abuse identification from the literature over the 20 years, nevertheless fails or determines not to make a report to the social service unit. The child is treated and released. Later the child is reinjured, usually more seriously, or again molested.

A lawsuit is brought against the physician. The claim is that if the required report had been made at the time of the initial episode, thereby causing the intervention of protection and family treatment, the subsequent injury would not have occurred. Therefore the failure to report the earlier incident is a "proximate cause" of the later harm.

As yet, Iowa has not experienced a supreme court case on this issue. But many other courts

have been presented with the question and every one thus far has upheld the legal doctrine of liability against the required reporter who failed to report. Due to the similarity between the Iowa statute and those in other states where court decisions have been returned, it is unlikely the courts in this state would reach a different conclusion.

#### CONCLUSION

The reporting function of the law serves as the vehicle for identifying potentially abused children and this function has been regularly emphasized. The immunities provision of the law is broad and powerful. So long as a child abuse report is made in good faith, even if the ensuing investigation reveals abuse has not occurred, the person making the report is immune from any action which would be taken by the parents or on behalf of the child. On the other hand, a failure to make a report can produce harsh results. The continuing legislative intent in shaping this law is clear: *Make the report and be protected — fail to do so and suffer the consequences.*

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# Improving Coordination In the Child Protection System

TIMOTHY BARBER-LINDSTROM

Des Moines, Iowa

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*New Iowa law became effective July 1 to improve the flow of information on child abuse reports between investigators and reporters. The manner in which it works and the importance of the interdisciplinary team concept are stressed in this paper.*

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THE KEY PURPOSE of Iowa's child abuse law and the system it establishes is to protect the child. The law also requires intensive effort to protect the integrity of the family unit, whenever possible. In large part, Iowa law is based upon federal law. This federal law (P.L. 93-247) is entitled the *Child Abuse Prevention and Treatment Act*. It is the basis for a national effort to prevent and treat child abuse and neglect. It contains criteria which serve as a model for legislation necessary to implement state child abuse programs.

Iowa statutes governing child abuse and neglect are Chapters 232 and 235A, Code of Iowa. Chapter 232, Division 3, provides the legal basis for reporting, investigating, and providing treatment services to abused children and their families. Chapter 235A establishes a Central Child Abuse Registry and procedures for accessing, disseminating, redis-

seminating, expunging and sealing child abuse information. This chapter also outlines the confidentiality provisions regarding child abuse information.

The various laws governing the Iowa child protective system identify several components which play an integral role in the system. The Juvenile Court, County Attorney, Law Enforcement Agency, Department of Human Services, other public and private treatment providers and many types of professionals who work with children all have legally prescribed roles in the system.

Because so many components, jurisdictions, and players are involved in child protection, children can be well protected. They can also get lost in the system through lack of coordination. When this occurs, neither the child nor the child's family receive the full benefit of the services intended to prevent future abuse. This article will discuss coordination problems which are important to the medical community and indicate how these problems can be overcome.

## FIRST CRUCIAL STEP

As mandatory child abuse reporters, physicians take the first crucial step to prevent future abuse. Certainly, a risk is involved in filing a child abuse report. Health practitioners and other treatment providers often fear that parents will withdraw their children from further treatment if a child abuse report is made.

In the past, this fear has been compounded by the inability of child protective workers to involve physicians and other mandatory reporters in the investigation process. In addition, those required by law to report abuse have had difficulty obtaining information

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The author is program manager for Child Protective Services, Adult, Children and Family Services, State Department of Human Services.



about the outcome of investigations they initiated. These complications have raised the anxiety levels of reporters and investigators alike.

*Has all pertinent information been uncovered? Has the information been properly interpreted? Has the correct decision been made? Is the child safe from future harm?* These are questions to which both investigators and mandatory reporters need satisfactory responses. During its 1984 session, the Iowa General Assembly removed obstacles to answering these questions through legislation which makes the physician and other mandatory reporters part of the child abuse investigation team.

The first part of this new legislation, effective July 1, 1984, permits child abuse investigators to request information from *any* mandatory reporter about *any* child abuse report under investigation. The mandatory reporter is required by the legislation to provide the requested information. The immunity provisions of the child abuse law protect mandatory reporters from any litigation which might otherwise result from this kind of information sharing.

The second part of the legislation requires the Department of Human Services to notify orally mandatory reporters of the results of child abuse investigations within 48 hours. Administratively, DHS has chosen to follow the oral notice with a written notice concerning the prohibition against improper dissemination of the information.

#### INFORMATION FLOW

Together, these changes should foster a relatively free flow between investigators, those who have information the investigators need and those who can explain and clarify information investigators already have. The ability to answer necessary investigative questions will improve. The ability of DHS workers, physicians and other treatment providers to embark immediately on a course of treatment which prevents further abuse will be enhanced.

It is important to note the concepts for these legislative changes took shape during a problem solving meeting between several representatives of the medical community and DHS. During the process of discussing the proposed changes, legislators relied heavily on advice from the medical community.

It is possible that knowledge of these recent

changes will further increase the number of reports made by health practitioners. In 1982, 500 of the 14,317 total child abuse reports were initiated by physicians. Of the 500 reports, 122 were founded. Founded means that, through investigation, it is determined that abuse did occur. In 1983, 973 of the total 14,511 reports were from physicians with 379 of these founded. Not only has the number of reports increased, but the rate of founded reports has also increased from 24.4% in 1982 to 38.9% in 1983.

With an increased exchange of information between child abuse investigators and physicians, it is hoped that both groups will be edu-

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### HIGHLIGHTS OF ABUSE REPORTING

#### 1982

Total reports ..... 14,317  
From physicians ..... 500  
Of the 500, 122 were founded.\*

#### 1983

Total reports ..... 14,511  
From physicians ..... 973  
Of the 973, 379 were founded.\*

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\* Means child abuse found.

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cated. Investigators can learn how to improve their use of medical information in documenting child abuse cases. Physicians can learn more about the technical requirements for abuse reporting and investigation resulting in more precise, accurate and thorough reporting.

#### MULTIDISCIPLINARY NEEDS

A difficult problem faced by DHS social workers is that the investigative and treatment decisions they must make need to be based on analysis of information which is outside their area of expertise. The medical community can play a key role in solving this problem through participation on multidisciplinary teams. A multidisciplinary team is a group of individuals who possess knowledge and skills related to the diagnosis, assessment and disposition of child abuse cases. Team members must be professionals practicing in the disciplines of medicine, public health, mental health, social

(Please turn to page 486)

work, child development, education, law, juvenile probation or law enforcement. The team assists DHS in assessing cases and developing treatment recommendations. Each DHS district office has been encouraged to create sufficient teams to provide consultation to staff on investigation and treatment issues. A number of physicians are on these teams. Many more could be used. A broader pool of experts could lighten the load for everyone involved. Anyone who is interested in this type of participation in the child protection system should contact the DHS district administrator for further information.

#### MEDICAL PARTICIPATION

The medical community has participated in

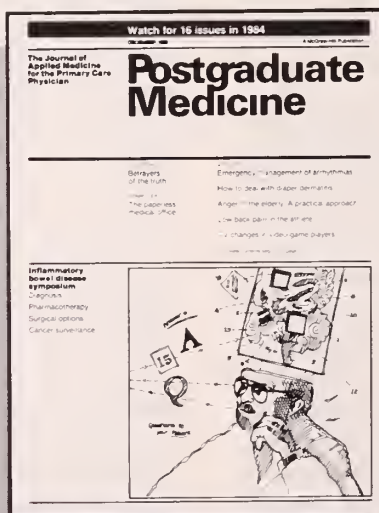
several other ways in child protection efforts. Physicians and nurses have provided much needed education on identification of child abuse. They have participated in local councils on child abuse and neglect and assisted in the development of several child abuse prevention projects. Continued efforts in these areas are crucial to the safety of children who are at risk to abuse.

It is the intention of the Department of Human Services to further develop and strengthen our partnership with the medical community in our mutual efforts to protect children. Many problems face us. These need to be aggressively pursued and resolved through coordination, cooperation and partnership.

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## QUESTIONS AND ANSWERS

*(Continued from page 465)*

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foster care for a child may be included in reports required by a juvenile court petition.

Senate File 2293 also made substantive changes in Chapter 235A of the Iowa Code which addresses child abuse. The changes in 235A include:

a. DHS is required to orally notify all mandatory reporters of case investigation results and of the confidentiality provisions.

b. A new category of report is established which includes cases that are neither founded nor unfounded. In these cases, abuse is strongly suspected and most of the proof is clear, but there is something lacking in order to substantiate the case. This new section of the Code will allow DHS to maintain the report in the central abuse registry for 1 year to establish a pattern of abuse, should subsequent reports be received.

**Could you explain the term "mandatory reporter" and its association with child abuse?**

As the term relates to child abuse, a "mandatory reporter" is a person who is required by law to report suspected cases of physical abuse, sexual abuse and neglect of children. Health practitioners are considered by law to be mandatory reporters.

**As mandatory reporters, how can physicians increase their effectiveness?**

Precise and complete reports of suspected child abuse are important to our investigative workers. Physicians and other mandatory reporters must have a clear understanding of what constitutes child abuse under Iowa law. By gaining this understanding, physicians can report the information needed for an investigation. I recommend that physicians, county medical societies, hospitals and clinics contact a district office of the DHS to arrange a meeting with our staff. We will help them review the child abuse definition, reporting requirements and investigation process.

The article by Timothy Barber-Lindstrom appearing in this issue explains recent legislative changes which make this participation possible.

**How can physicians help encourage safeguards against child abuse?**

Our mutual goal is to identify abused children. Physicians can help immensely by thorough reporting. If physicians are willing to testify in juvenile court about abuse cases, the court will be able to perform its enforcement duties more effectively. We urge physician participation on multidisciplinary consultation teams. These teams assist the DHS in assessing and diagnosing child abuse cases and the experience can be valuable.

As mandatory reporters, physicians receive automatic feedback about the results of child abuse investigations. Physicians should review the results carefully to insure all information reported to our workers has been addressed. If there has been an oversight in our investigation, the DHS should be contacted promptly.

Finally, I encourage physicians to suggest changes in policy and procedure to improve our overall efforts to protect children.

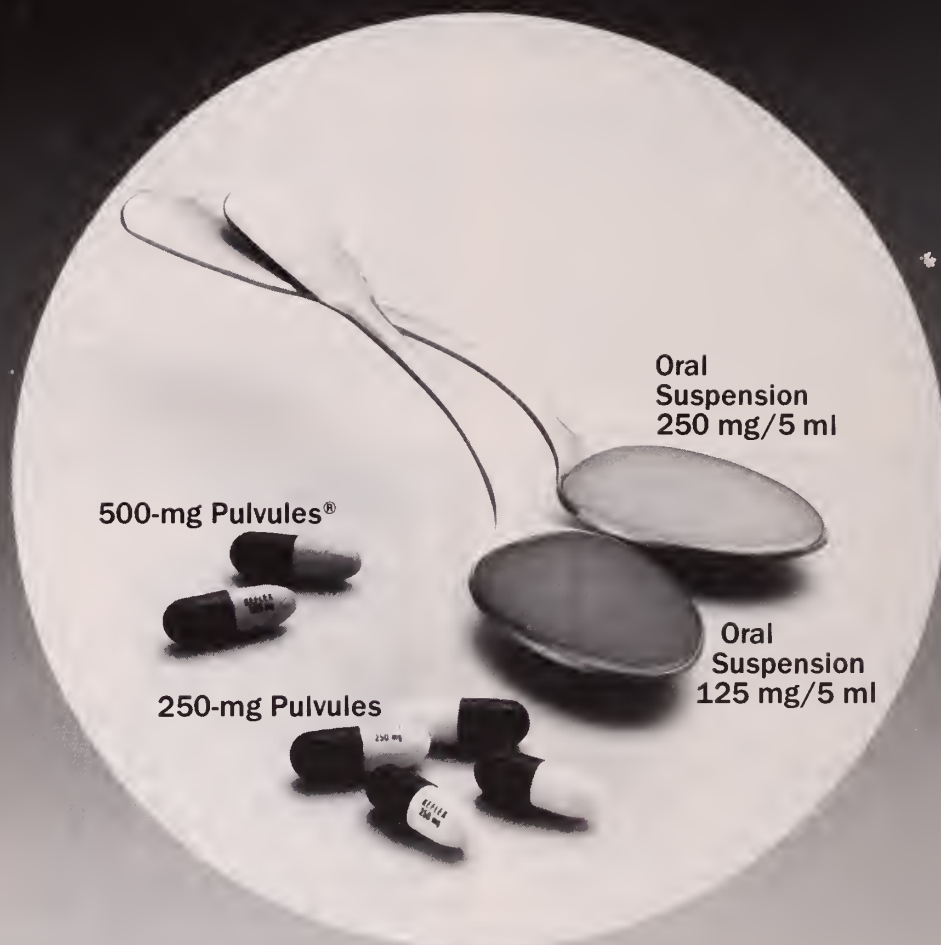
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January 17 and 18, 1985, Marriott Hotel, El Paso, Texas, cosponsored by Texas Tech University School of Medicine Regional Academic Health Center, Providence Memorial Hospital and The American Cancer Society (CMEs and CEARPs applied for)

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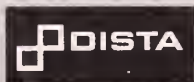
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Richard M. Caplan, M.D.

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## OUR MAN IN EDUCATION

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### WILDFLOWERS AND MATERIA MEDICA

A walk in the woods usually won't do it, but an amble almost surely will. As my walking speed drops, my frequency of noticing and thinking rises. On such an amble this afternoon my gaze fastened, due to my slow pace, on some little white flowers with a petal arrangement that suggested a daisy. They grew in a thick mass of foliage near an area that was mowed. What I was looking at would surely have been called weeds by the mower. But I felt they would better be called wildflowers. They looked hardy, graceful and just plain pretty.

One definition of a weed is "a plant for which no purpose has yet been found." I wondered if anybody had ever known a purpose for this little flowering plant. And then I realized suddenly what an abysmal ignorance I have of plants, especially in relation to their therapeutic capacities. I never took a botany course; my forebears never took me as a child on walks in the woods, pointing out which plants are useful or dangerous, as might have happened had I been born a century ago.

What physician, at the turn of this very century, might have guessed that almost all physicians (as I surmise) would be so ignorant of the therapeutic properties of plants; that few pre-meds would have taken a course in descriptive botany; that our modern courses in pharmacology would use chemical names and formulas for the synthetic drugs of interest and almost

never even mention the history of drugs-from-plants; that some of the pharmaceutical companies still, I'm told, make effort to find useful, potentially profitable new drugs from plants (an image forms in my mind of a medieval alchemist's shop converted to a modern organic chemistry laboratory, but with the same motivation of transforming dross into gold and power).

I knew the term "materia medica" as naming a major component of medical study in times gone by; yet it had already become passé by midcentury when I formally studied pharma-

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*"Alas, the loss from all doctors' offices of those fascinating jars that held leaves, roots, tinctures, powders and so on!"*

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cology. I couldn't, without recourse to dictionary, have given this precise definition: "that branch of medical science which treats of the drugs employed in medicine; collectively, all the curative substances employed in medicine." Alas, the loss from all doctors' offices of those fascinating jars that held leaves, roots, tinctures, powders, and so on!

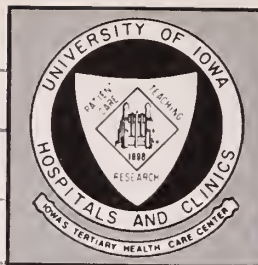
Books on folk medicine (I gather) still tell the reader how to make nostrums from indigenous herbs. And I read in a medical journal that interest has been renewed lately at the prospect of finding possible antimycotic and antibiotic activity in garlic. The following words illustrate this kind of knowledge (or "conventional wisdom," if not knowledge). They're from the unique recent bestseller, *The Name of*

*(Please turn to page 496)*

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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

## DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

### DRUG MANAGEMENT OF ADULT VASCULAR HEADACHES (MIGRAINE AND CLUSTER HEADACHE):

#### Part I — Treatment of the Acute Attack

**T**HE MANAGEMENT of migraine headaches in adults must address both the treatment of the acute attack and the prevention of future episodes. Drug intervention is a crucial aspect of management but should not be the sole method of approach. For instance, possible trigger factors must be identified and often can be eliminated (e.g., oral contraceptives, skipping of meals, alcohol and certain foodstuffs, irregular sleeping habits, stress, etc.).

##### I. MIGRAINE (BOTH CLASSICAL AND COMMON TYPE)

(a) *Recognize the prodromata.* This is relatively simple in the classical variety but may be difficult in common migraine, because the prodrome is less well defined. *Time is of the essence.* The sooner medication is used the more effective it will be.

(b) *Prevent or relieve gastrointestinal symptoms.* This is a crucial part of acute management of vascular headaches. Nausea and vomiting are often features of the acute migraine episode. Furthermore, some of the medications used to relieve the pain may induce nausea and vomiting.

An advantage of the early use of antiemetics is their sedative side effects. Most acute migraine attacks are more easily and rapidly controlled if the patient can rest, and, ideally, sleep, in a quiet environment. This helps shorten the attack itself and prevents the development of the muscular tension component which often prolongs the headache phase of migraine attacks.<sup>1</sup>

Phenothiazine derivatives or antihistamines can be used. One antiemetic, metoclopramide, may be especially useful,<sup>2</sup> because of an additional effect. Metoclopramide (Reglan®) increases gastric and duodenal peristalsis, and relaxes the pyloric sphincter leading to accelerated gastric emptying. These are desirable effects because gastric stasis is often present during a migraine attack — which may contribute significantly to the inefficiency of oral preparations in migraine.<sup>3</sup> The drug may induce extrapyramidal symptoms, and it should not be used during pregnancy (teratogenic side effects not known). The action of metoclopramide is antagonized by anticholinergic drugs and narcotics.

This preparation can be used in the oral and injectable forms. The dose is 10 mg of metoclopramide hydrochloride given PO 15 to 30 minutes before administration of pain-relieving medication.

(c) *Relief of headache.* The drug of choice is still ergotamine. This is an alpha adrenergic blocking agent with direct action on the smooth muscle of peripheral and cranial vessels. The direction of action depends on the preexisting resistance of the vessel. Ergotamine will act as a constrictor if the vascular resistance is low but will produce vasodilatation if there is increased resistance.<sup>4</sup> It has also been shown that

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it closes cephalic arteriovenous shunts.<sup>5</sup> Ergotamine also affects serotonin turnover in the brain.<sup>6</sup> Its action during the migraine attack may be related to all these mechanisms. It is important that no vasoconstrictive effect has been noted in the internal carotid circulation when therapeutic doses of this medication have been used,<sup>7</sup> but that the vascular territory supplied by the basilar artery may be more easily affected by the medication. The recommended dosage is 1 to 2 mg (either PO or per rectum) initially, the sooner the better, followed by 1 mg every 30 to 45 minutes if necessary. *No more than 4 to 6 mg should be used in a single attack.* The weekly amount should not exceed 10 mg.

**T**HE MAJOR side effect is on the gastrointestinal system. Severe nausea and vomiting can be a contraindication to the use of the preparation. Pregnancy is an absolute contraindication to the use of ergotamine because of its action on the uterus. The medication should also be avoided in any case in which vasoconstriction can be dangerous. In otherwise healthy young adult subjects, it is a safe and useful agent.

One complication that occurs frequently when the recommended dosages indicated above are exceeded is the development of "rebound" headache attacks. The onset of these medication-related severe migraine headaches is often insidious. As headaches continue to increase in frequency, the patient realizes that more and more ergotamine is needed to control the pain. Management of this problem includes (a) admission to the hospital for sedation and rest and (b) discontinuation of ergotamine. Sedation should be initiated *before* ergotamine is discontinued. A severe withdrawal headache generally ensues but subsides within days, after which the occurrence of attacks returns to its original frequency.<sup>8</sup>

Ergotamine is available as ergotamine tartrate, in sublingual tablets of 2 mg, in oral tablets of 1 mg, and in suppositories of 2 mg. A parenteral form for IM injection is also available, 1 mg of dihydroergotamine mesylate in 1 ml ampules. Ergotamine, PO or per rectum, should not be given at less than 30-to-60-minute intervals. The total daily dosage should not exceed 3 to 4 mg per day or 10 mg per week. If given in parenteral form, no more than 2 to 3

mg should be given in a single day and the weekly limit should be 5 to 6 mg.

Oral tablets and suppositories of ergotamine tartrate are available in combination with other medications. Some dosage forms contain antiemetic substances; one unfortunate combination is ergotamine with caffeine. Caffeine enhances the absorption and action of ergotamine and thus aggravates the gastrointestinal side effects and also causes CNS stimulation which counteracts the sedation required for the treatment of the acute attack.

An alternative medication is midrin, a combination of isometheptene (a sympathomimetic amine which acts as a vasoconstrictor of cranial arterioles), dichloralphenazone (a mild sedative) and acetaminophen. This preparation neither aggravates nor induces nausea and is a useful alternative when ergotamines cannot be used. Midrin has the advantage of containing a mild sedative which can help reduce the tension component of migraine headache. It is usually used as 1 to 2 capsules at the beginning of an attack followed by 1 capsule every 1 to 2 hours, if necessary, but not exceeding 5 capsules in 24 hours.

*Aspirin* or *acetaminophen* given in the usual oral form often fails to induce relief. However, if either drug is administered in an effervescent form at the beginning of the attack, especially *following* the administration of metoclopramide, the effectiveness is increased.<sup>9</sup>

The usefulness of calcium channel blockers in the acute treatment of migraine is currently under study.<sup>10</sup>

Patients who come to the attention of a physician after the attack has reached its peak, often suffering for several hours or even days, are a major problem of management. These patients usually require admission and heavy sedation which will resolve the attack in a few days. The intravenous administration of dihydroergotamine, every 8 hours, has been shown to shorten the period of resolution to 48 hours.<sup>11</sup>

**C**ONSIDERING that headaches are usually a chronic condition which may persist in some form for most of the patient's life, narcotic analgesics should *not* be used to treat acute migraine. Narcotic analgesics should be avoided in order to prevent the additional problem of drug addiction in these already

troubled patients. Unfortunately, narcotic use early in the treatment of acute attacks may result in these patients not responding later to more appropriate therapy.

## II. CLUSTER HEADACHES

The treatment of the cluster headache poses special problems, due to the rapid onset, severity of pain, and short duration of the attacks, as well as to their repetitiveness. Most forms of ergotamine have too long an absorption period to be effective in this type of headache. However, the IM injection of 1 mg dihydroergotamine can terminate the attack. Also, the sublingual forms of ergotamine tartrate, because of their faster absorption, can be helpful in the more prolonged cluster headache episodes. Since these attacks occur on a daily basis, often even several times per day, ergotamine overdose will develop if it is used regularly. The best approach is to use 100% O<sub>2</sub>, inhaled through a facial mask for approximately 5 to 10 minutes at a rate of 6 to 8 liters per minute.<sup>12</sup> The mechanism by which oxygen stops the cluster headache attack is not known.

The crucial management of this type of headache is prevention. — HANNA DAMASIO, M.D., ASSOCIATE PROFESSOR, Department of Neurology.

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Information of Interest

## STATE DEPT. OF PUBLIC HEALTH



### FEDERAL LAW: ACCESSIBILITY FOR DEAF PATIENTS

**A**CCESSIBILITY FOR HANDICAPPED persons is getting more attention in recent years. Hospitals, and medical services in general, have been expressing their support in this area, as exhibited by various modifications in architecture and health care delivery. Although medical services have always been more involved with handicapped persons, from a physiological standpoint, in treating physical disabilities, there has often been a lack of sensitivity to disabled persons' needs for independence and equal access to all services.

One of the main catalysts for change in this regard is Federal Law — P.L. 93-112, Section 504, which is the "civil rights act" for disabled persons. Section 504 applies to health care and social service programs, schools, colleges, housing, transportation, and other public services that are recipients of federal funds. If programs or services are not recipients of federal dollars, the law does not apply. Section 504 provides handicapped persons the opportunity to receive benefits and services that are equal to and as effective as those offered non-handicapped persons. This federal law has been in effect since 1973 and in recent years various federal and state agencies have developed specific regulations and/or guidelines with which recipients of federal dollars must comply.

The former Secretary of the Department of Health, Education and Welfare (Joseph A. Califano) promulgated extensive regulations which apply to health care providers and are still in effect under that agency's revised name

of the Department of Health and Human Services (DHHS). The regulations for all recipients include a compliance provision: Failure to meet Section 504 anti-discrimination requirements can result in withdrawal of federal funding. Any health care provider who receives federal funding in the form of grants, loans, contracts, services, property, Medicaid, etc. under DHHS, or any other federal source, must comply. If a program receives any federal financial assistance for one part of its activities, compliance for all activities is then required — even if those other activities do not receive any direct aid.

Administrators of health care facilities are required to perform a self-evaluation regarding the quality and availability of services to handicapped persons and then to correct any existing inequitable policies and practices. These evaluations are to be done with the assistance and expertise of local handicapped citizens or organizations. DHHS requires recipients with 15 or more employees to adopt grievance procedures for simple complaints that cannot be resolved in this manner and all others can be filed with the programs' regional office for Civil Rights. Persons can also bypass the agency complaint procedures and file a lawsuit in federal court.

Accessibility to health care services for deaf persons in particular can include some of the following provisions. Programs/agencies with 15 or more employees must provide "auxiliary aids" which, for deaf persons, can include:

1. Temporary or full-time hiring of qualified sign language interpreters who make possible the necessary communication between the deaf patient and the medical staff, or who make health-related educational classes understood.
2. Utilization of Telecommunication Devices

*(Please turn to page 496)*

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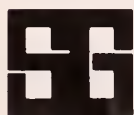
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Iowa State Department of Health  
Lucas State Office Building  
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## OUR MAN IN EDUCATION

(Continued from page 489)

*the Rose* by Umberto Eco, and are spoken by a  
Benedictine monk in 1327.

"*Frangula . . . A good infusion is made from the  
bark, for hemorrhoids. And that is arctium lappa; a  
good cataplasm of fresh roots cicatrizes skin eczemas  
. . . many of these herbs, duly compounded and  
administered in the proper dosage, could be used for  
lethal beverages and ointments . . . datura stramo-  
nium, belladonna, hemlock: they can bring on  
drowsiness, stimulation or both; taken with due care  
they are excellent medicines, but in excess doses they  
bring on death.*"

Although fictional, the passage seems a  
reasonably authentic presentation of either  
folk or old-time-expert knowledge of therapeu-  
tics and toxicology that reinforces my inferior-  
ity feelings about wildflowers and *materia  
medica*. But the beauty, grace, persistence and  
the very aliveness of these little blooms re-  
stores my equanimity.



## September 1984 Morbidity Report

Disease	Sept. 1984 Total	1984 to Date	1983 to Date	Most Sept. Cases Reported From These Counties
Amebiasis	5	57	33	Floyd, Johnson, Polk, Sioux
Brucellosis	1	2	3	Pottowattomie
Chickenpox	26	6413	5544	Scattered
Compylobacter	37	238	289	Scattered
Cytomegalovirus	0	10	11	
Eaton's Agent infection	3	31	102	Coss, Clinton Linn
Encepholitis, virol	4	24	49	Dubuque, Scott, Wayne
Erythema infectiosum	0	51	25	
Gastroenteritis (GIV)	745	9504	9360	Scattered
Giordiasis	61	271	204	Scattered
Hepatitis, A	7	41	21	Scattered
Hepatitis, B	7	78	63	Scattered
Hepatitis, Non A-B	1	14	33	Cerro Gordo
Hepatitis type unspecified	1	9	10	Black Hawk
Herpes Simplex	49	678	770	Scattered
Herpes Zoster	0	2	6	
Histoplasmosis	0	16	15	
Infectious mononucleosis	5	106	143	Black Hawk, Linn
Influenza, lab confirmed	0	176	207	
Influenza-like illness (URI)	1006	31810	30297	Scattered
Legionellosis	0	3	6	
Malaria	1	2	3	Linn
Meningitis oseptic	19	49	113	Scattered
bocterial	8	91	124	Scattered
meningococcal	0	21	16	
Mumps	3	22	38	Des Moines, Madison Woodbury
Pertussis	1	10	6	Polk
Robies in animals	11	124	169	Scattered
Reye Syndrome	0	2	2	
Rheumatic Fever	0	0	1	
Rubella (German measles)	0	1	0	
Meosles	0	0	0	
Salmonellosis	33	187	257	Scattered
Shigellosis	4	32	41	Dickinson, Johnson, Linn, Polk
Toxic Shock Syndrome	1	11	14	Jefferson
Tuberculosis total ill	5	56	52	Scattered
bact. pos.	5	50	40	Scattered
Typhoid Fever	0	0	0	
Veneral diseases: Gonorrheo	400	3338	3475	Scattered
Syphilis	0	11	19	

Other Non-Reportable Diseases: Ascaria — 1, Mitchell, 1, Shelby; Botulism Infant — 1, Foyette; Chlamydia — 2, Johnson; Clonarchis — 1, Clinton, 2, O'Brien, 1, Iowa, 2, Polk; Cocksackie — 1, Davis, 2, Dubuque, 1, Johnson; Hookworm — 2, Muscatine; Blastomyces — 1, Delaware; Trichuris Trichiuro — 1, Muscatine, 1, Polk; Ureoplasma ureolyticum — 1, Butler, 1, Black Hawk, 1, Clinton, 2, Linn, 3, Johnson, 1, Polk.

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November 1984 / 497

## NEWS/PRODUCTS, PROGRAMS, ETC.

**NEW PRODUCT** — Vivonex T.E.N., a high nitrogen elemental diet, has been introduced by Eaton Pharmaceuticals, Inc. to help stressed catabolic patients. This low residue feeding permits maximal absorption with minimal digestion. Each 80.4 gm packet provides 3,000 calories and 17.1 gms of available nitrogen.

**ALCOHOL ABUSE BOOKLET** — The Miller Brewing Company has published a booklet entitled, "Somebody Do Something." It offers a perspective on alcohol abuse. The booklet covers the involvement of the alcohol beverage industry with the problem of alcohol abuse.

**FREE COPY** — A complimentary copy of a report entitled, "Smoking or Health: It's Your Choice," may be obtained from the American Council on Science and Health. This report is very revealing. Send a self-addressed, stamped (37¢ postage), business size (#10) envelope to ACSH, 47 Maple Street, Summit, New Jersey 07901. Write "Smoking or Health" on the back of the envelope.

**ALCOHOL INFO** — Excellent educational material on alcohol abuse is in a new packet available from the National Clearinghouse for Alcohol Information, Station IA, P. O. Box 2345, Rockville, Maryland 20852. One booklet is especially valuable to physicians and nurses caring for pregnant women . . . it is a guide to "Preventing Fetal Alcohol Effects."

**ACP RECOMMENDATION** — The American College of Physicians has issued a recommendation declaring the use of apheresis for the treatment of chronic, severe rheumatoid arthritis has not proved efficacious. The recommendation reinforces a previous statement declaring there is need for further investigation in the form of randomized, controlled, double-blind studies. One exception to the recommendation is noted. Patients with life-threatening

rheumatoid vasculitis may be prime candidates for a trial course of plasmapheresis.

**NEW DEVICE CONSERVES OXYGEN** — A new "Oxymizer" device has been designed to save patients on home oxygen therapy considerable expense. It provides an oxygen saturation level equivalent to that achieved with a standard nasal cannula at one-quarter the flow rate. The device features a close-coupled reservoir for storage of oxygen that would normally be wasted while the patient is exhaling. For information, write to Chad Therapeutics, Inc., Woodland Hills, California.

**NEW DIABETES PROGRAM** — Watch for information from the American Diabetes Association on an educational effort to acquaint physicians with Type II Diabetes. A nationwide program will commence with teleconferences and seminars. A *Physician's Guide to Type II Diabetes* will be available. This clinical education program is supported by a grant from the Upjohn Company. Interested physicians may call toll-free 800/221-2207.

**MARKETING INFO** — Colwell Systems, Inc., has designed a marketing information kit for the physician who wishes to develop a marketing program to enhance his/her office practice. Write to Colwell Systems, Inc., 201 Kenyon Road, Champaign, Illinois 61820 or call toll-free 800/637-1140.

**NEW FROM SEARLE** — Intravenous Calan® (verapamil HCl) is available from Searle Laboratories in pre-filled syringes (5 mg and 10 mg sizes), a form that is faster and more convenient than the previously available all-glass ampuls. Intravenous Calan® is used for rapid control of certain irregularities of cardiac rhythm. Searle also markets Calan® in an oral tablet for the treatment of angina.



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Please turn the page for a brief summary of prescribing information.

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**Contraindications:** Anaphylactoid reactions have occurred in individuals hypersensitive to Motrin Tablets or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin, iodides, or other nonsteroidal anti-inflammatory agents

**Warnings:** Peptic ulceration and GI bleeding, sometimes severe, have been reported. Ulceration, perforation and bleeding may end fatally. An association has not been established. Use Motrin Tablets under close supervision in patients with a history of upper gastrointestinal tract disease, after consulting ADVERSE REACTIONS. In patients with active peptic ulcer and active rheumatoid arthritis, try nonulcerogenic drugs, such as gold. If Motrin Tablets are used, observe the patient closely for signs of ulcer perforation or GI bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity with papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with Motrin Tablets.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin Tablets and the patient should have an ophthalmologic examination, including central visual fields and color vision testing.

**Fluid retention and edema** have been associated with Motrin Tablets, use with caution in patients with a history of cardiac decompensation or hypertension. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of Motrin Tablets safety in patients with chronic renal failure have not been done.

Motrin Tablets can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, skin rash, weight gain, or edema.

Patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin Tablets are added.

The antipyretic, anti-inflammatory activity of Motrin Tablets may mask inflammation and fever.

As with other nonsteroidal anti-inflammatory drugs, borderline elevations of liver tests may occur in up to 15% of patients. These abnormalities may progress, may remain essentially unchanged, or may be transient with continued therapy. Meaningful elevations of SGPT or SGOT (AST) occurred in controlled clinical trials in less than 1% of patients. Severe hepatic reactions, including jaundice and cases of fatal hepatitis, have been reported with ibuprofen as with other nonsteroidal anti-inflammatory drugs. If liver disease develops or if systemic manifestations occur (e.g. eosinophilia, rash, etc.), Motrin should be discontinued.

**Drug interactions:** Aspirin used concomitantly may decrease Motrin blood levels.

Coumarin bleeding has been reported in patients taking Motrin and coumarin.

**Pregnancy and nursing mothers:** Motrin should not be taken during pregnancy or by nursing mothers.

**Adverse Reactions:** The most frequent type of adverse reaction occurring with Motrin is gastrointestinal of which one or more occurred in 4% to 16% of the patients.

#### **Incidence Greater than 1% (but less than 3%)—Probable Causal Relationship**

**Gastrointestinal:** Nausea\*, epigastric pain\*, heartburn\*, diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). **Central Nervous System:** Dizziness\*, headache, nervousness. **Dermatologic:** Rash\* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic/Endocrine:** Decreased appetite. **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

#### **Incidence less than 1%—Probable Causal Relationship\*\***

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests. **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia. **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS). **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations. **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting; anaphylaxis, bronchospasm (see CONTRAINDICATIONS). **Renal:** Acute renal failure in patients with pre-existing significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

#### **Incidence less than 1%—Causal Relationship Unknown\*\***

**Gastrointestinal:** Pancreatitis. **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri. **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions. **Special Senses:** Conjunctivitis, diplopia, optic neuritis. **Hematologic:** Bleeding episodes (e.g. epistaxis, menorrhagia). **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction. **Cardiovascular:** Arrhythmias (sinus tachycardia, sinus bradycardia). **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schönlein vasculitis. **Renal:** Renal papillary necrosis.

\*Reactions occurring in 3% to 9% of patients treated with Motrin. (Those reactions occurring in less than 3% of the patients are unmarked.)


\*\*Reactions are classified under "Probable Causal Relationship (PCR)" if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under "Causal Relationship Unknown" if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine so alkaline diuresis may be beneficial.

**Dosage and Administration:** Rheumatoid arthritis and osteoarthritis. Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Do not exceed 2400 mg per day. Mild to moderate pain. 400 mg every 4 to 6 hours as necessary.

**Caution:** Federal law prohibits dispensing without prescription.

MED 87-S



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**EQUAGESIC® REFORMULATED** — Equagesic® (meprobamate with aspirin) has been reformulated, according to a recent announcement by Wyeth Laboratories. The new formulation combines 200 mg of meprobamate with 325 mg of aspirin.

**FREE REPORT** — Advice on how to deal with pesticides effectively and safely is available in a new report from the American Council on Science and Health (ACSH). To obtain a complimentary copy of **PESTICIDES IN YOUR HOME AND GARDEN** send a stamped (37¢ postage) self-addressed, business-size (#10) envelope to Pesticide Report, ACSH, 37 Maple Street, Summit, New Jersey 07901.

**LABELS IN BRAILLE** — Of interest to physicians in Iowa communities where there is a Snyder Drug Store, is a recent announcement of a program for the benefit of the blind. Snyder Drugs has installed special prescription-labelers in its company-owned stores which will enable pharmacists to type labels and other medication information in Braille. The

company is to be commended for making available this excellent safety measure for sightless persons.

**NEWS FROM HEWLETT-PACKARD** — A long-life universal quartz pressure transducer, the HP 1290C, is now offered by Hewlett-Packard Company. It is compatible with virtually any monitor or pressure amplifier for the measurement of physiological fluid pressures. Compatibility is easily accomplished with connectors for adapter cables to both HP and non-HP monitoring equipment. For information, call your local Hewlett-Packard sales office.

**AMA BOOKLET** — A new color-book-style publication available from the AMA, "Sex Talk for a Safe Child," is an invaluable aid for physicians, parents and educators to help impart healthy feelings about growth and sexuality while explaining some realistic dangers. To order a copy, send \$3 (includes postage and handling) to Order Department QP-234, AMA, P. O. Box 10946, Chicago, Illinois 60610.



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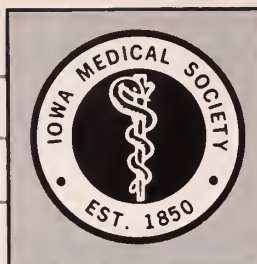
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## ABOUT IOWA PHYSICIANS



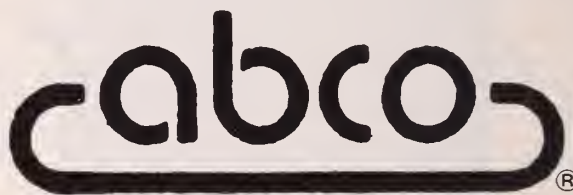
**Dr. Jack F. Consumus**, Burlington, recently was named a fellow of the American College of Pathologists. Dr. Consumus received the M.D. degree at the U. of I. College of Medicine and completed his pathology residency at University of Iowa Hospitals. . . . **Dr. William B. Bean**, Sir William Osler Professor of Medicine Emeritus at the U. of I., has been selected as a leader in American medicine and will participate in a videotaping of his memoirs. This revives a series of videotaped interviews conducted under sponsorship of Alpha Omega Alpha and the National Medical Audiovisual Center at the National Library of Medicine. The series was discontinued in 1979 and is

being resumed under the auspices of the American College of Physicians and the Lister Hill Center.

**Dr. Michael J. Whitters**, Clarion, recently received the AMA Physician's Recognition Award. . . . **Dr. David Moffett** recently joined Midlands General Practice Associates in Council Bluffs. Dr. Moffett received the M.D. degree at Creighton University in Omaha, Nebraska; interned and served his family practice residency at St. Joseph Hospital in Omaha. . . . **Dr. Robert Foor** recently joined Cogley Medical Associates in Council Bluffs. Dr. Foor re-

*(Please turn to page 502)*

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ceived the M.D. degree at George University in Grenada; interned at Lutheran Medical Center in Brooklyn, New York and served his pediatric residency at the University of Nebraska Medical Center. . . . **Dr. J. G. McCarroll**, Fort Dodge, recently retired from medical practice. Dr. McCarroll received his medical education at Queens University in Ontario; interned at Port Arthur Hospital in Thunder Bay and had his residency in obstetrics and gynecology in Montreal, Canada, and London, England. Dr. McCarroll located in Fort Dodge in 1962. During his retirement, Dr. McCarroll plans to teach and lecture on obstetrics and gynecology. . . . **Dr. Noel Villanueva** recently opened a surgical practice in Oelwein. Dr. Villanueva received his medical education in the Philippines and took postgraduate work in Cincinnati, Ohio.

**Dr. William E. Owen**, St. Ansgar, recently was honored by the St. Ansgar Chamber of Commerce. A plaque was presented to Dr. Owen for his many years of community service as mayor, City Council member, and as leader

with local Boy Scouts. . . . **Dr. Rouben Mirbegian** recently opened an orthopedic surgery practice in Keokuk. Dr. Mirbegian received his medical education in Tehran and took postgraduate work in Boston and Chicago. . . . **Dr. Jim Williams** recently joined the staff at the Creston Medical Clinic, P.C. A native of Ottumwa, Dr. Williams received the M.D. degree at the U. of I. College of Medicine and had a family practice residency in Ogden, Utah. . . . **Dr. Prakash Bontu** recently opened a cardiology practice in Davenport. Dr. Bontu received his medical education at Rangaraya Medical School in India. He served a 2-year internship at St. Alexis Hospital in Cleveland, Ohio, and later served a 5-year internal medicine residency and fellowship in cardiology at St. Francis Hospital in Evanston, Illinois.

In the October issue of IOWA MEDICINE, **Dr. N. K. Pandeya**, Des Moines, was incorrectly reported as having been named a fellow of the American Society of Plastic and Reconstructive Surgeons. Instead, Dr. Pandeya was elected a fellow of the American Academy of Osteopathic Surgeons.

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**OB/GYN** — Board Certified or Board Eligible to join progressive 12 physician multispecialty group practice. Advantages of rural setting with metropolitan practice style. 25 miles from Minneapolis. Offers opportunity to develop OB section for progressive clinic with large geographical referral area. New fully equipped practice facilities are adjacent to a modern 110-bed hospital. Guaranteed salary and benefits schedule with buy-in option at 2 years. Send CV to: Dr. Jon D. Wempner, Chief of Staff, Lakeview Clinic, Ltd., 424 State Hwy 5 West, Waconia, Minnesota 55387 or telephone 612/442-4461.

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**EMERGENCY ROOM PHYSICIAN** — For hospital emergency room. Full time position. Competitive salary. Sartori Hospital is located in a university town of 35,000 and a metro area of 100,000; a unique blend of university life, culture, industry and small town friendliness. Contact Administrator, Sartori Memorial Hospital, 6th and College, Cedar Falls, Iowa 50613. 319/266-3584.

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**FAMILY PRACTITIONER POSITION** — available in rural setting. 20 minutes from Des Moines. Busy clinic with young Board Certified Family Practitioners. Write Box 238, Indianola, Iowa 50125.

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**NEEDED FOR THREE IOWA LOCATIONS** — Emergency Room and Neighborhood Clinic physicians needed for three Iowa locations. Compensation \$70,000-\$100,000 annually. Contact Central Iowa Medical, P.C., P. O. Box 65574, West Des Moines, Iowa 50265 or call 515/223-9378.

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**FAMILY PRACTITIONER WANTED** — BC/BE sought to join 8-member multi-specialty group. Salary guarantee with partnership possibility after first year. Contact John McDermott, Mgr., The Davenport Clinic, 1820 W. Third Street, Davenport, Iowa 52802. 319/326-1661.

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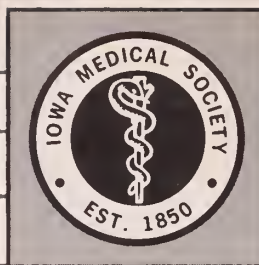
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## Children Are People, Too

**T**HE PHYSICIANS and social worker were worried. Two-week-old Janey was too fragile and thin. They worried she wouldn't make it. Janey's parents, developmentally delayed adults, had trouble telling time and didn't know when to feed her.

This story has a happy ending, according to Linda Rae Hardwig, a case social worker for the Iowa Department of Human Services (DHS).

"We involved a homemaker and increased services to Janey's home," she noted. "I went back 6 months later on a referral that turned out to be nothing and I found a fiesty, bouncing 6-month-old."

Hardwig says success stories like Janey's are more common today thanks to the increased role physicians and the general public are playing in neglect and abuse identification. This success story demonstrates how social services really can make a difference.

"Physicians and other professionals are more educated about the clues of abuse," Hardwig indicates. "Physicians and concerned citizens are able to point out, for instance, when a child may be sexually acting out. More often than not, there's no physical evidence of abuse. Physicians and the public need to be aware of behavioral clues."

Hardwig feels recent changes in child abuse reporting have been positive. Not only have physicians become "mandatory reporters," the general public is more conscious of its responsibility. Hardwig said this responsiveness has inundated the DHS and almost doubled the referrals in recent years.

"It's not unusual for abusing parents to say, 'Where were you 20 years ago when I was getting abused?'" Hardwig says. "I have to

explain to them there just were not the laws then as there are now."

"Most of the time our cases simply involve educating people about limits in discipline," she adds. "This means a lot of parents are just doing what their parents did."

The increasing awareness in child and sexual abuse has inspired many prevention programs to help the abused child and parent. In Des Moines, for example, there are the Parent Aid Program, the Homemaker Service and the Greater Des Moines Child Abuse and Neglect Council, to name several.

There are still changes Hardwig would like to see to make lives of abused children easier.

First, Hardwig suggests parenting classes. These classes could teach young people about abuse laws and abuse alternatives before they have children. Secondly, Hardwig hopes for a more stable economy.

"Unemployed parents often abuse their children," Hardwig says. "They are frustrated and lash out at those most vulnerable, their own children."

And, lastly, Hardwig supports less violence in popular sources, such as television, books, etc.

Although most abusing parents resist initial help, these same individuals usually love their children.

"Parents and social workers have the same end in mind for a child," Hardwig notes. "Both groups want the child raised to be a good citizen."

"The important thing to remember," Hardwig concludes, "is that children are persons, too. They need to be loved and they absolutely need physical touching, the hugging kind."

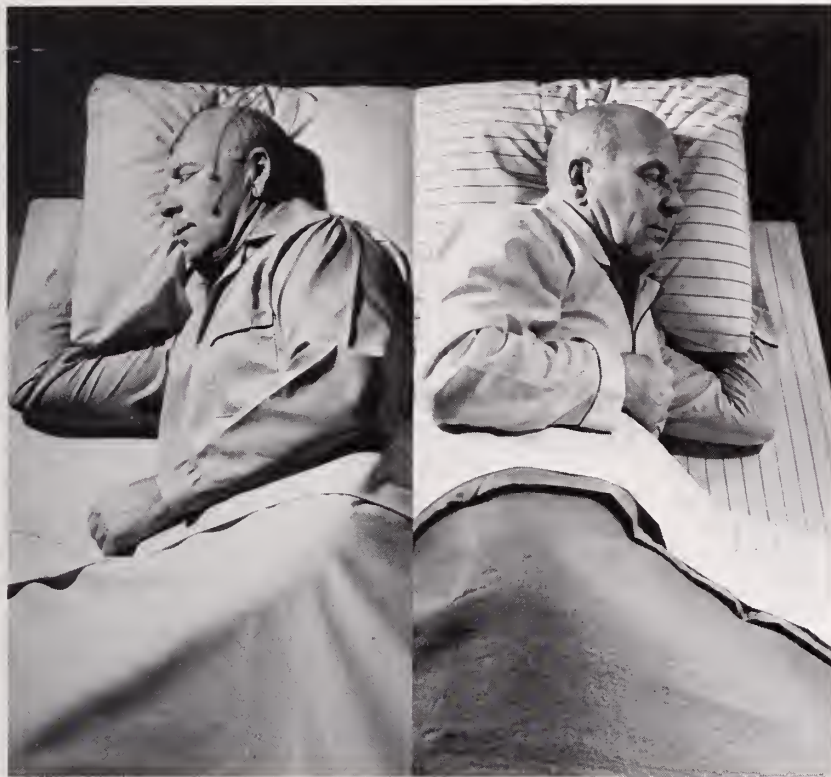
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Linda Rae Hardwig has been employed in the Child Protective Investigation Unit of the State Department of Human Services since 1975.



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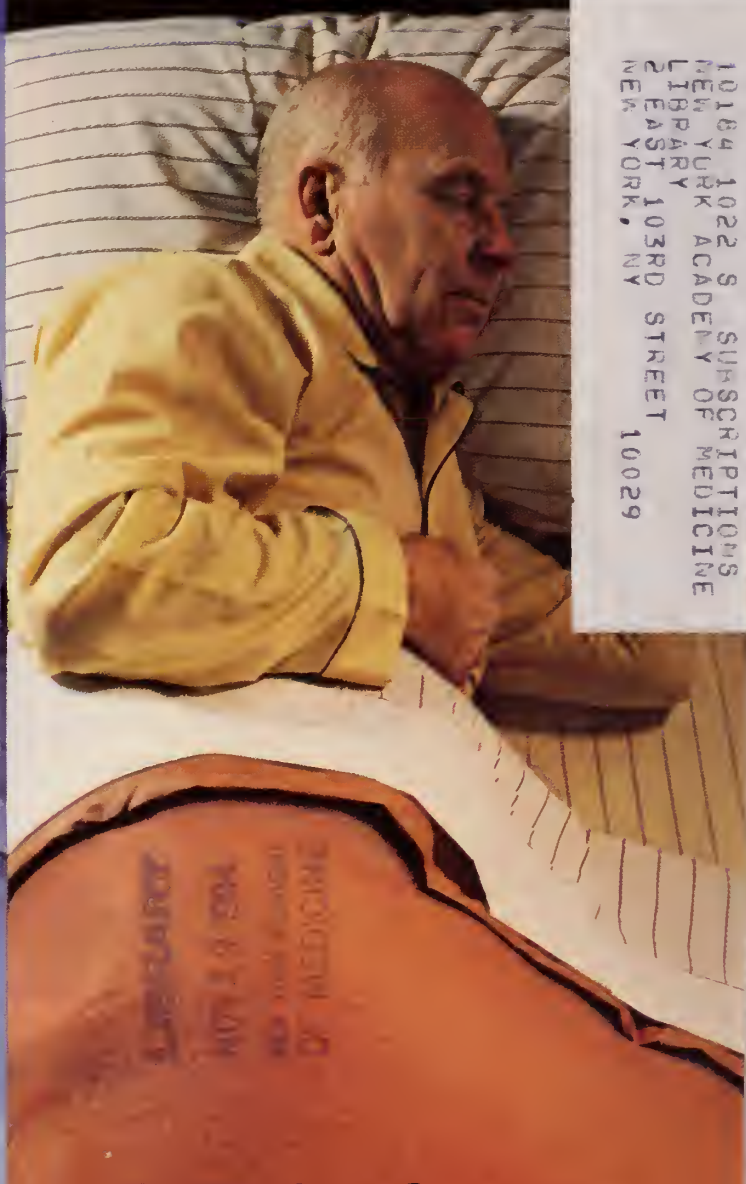
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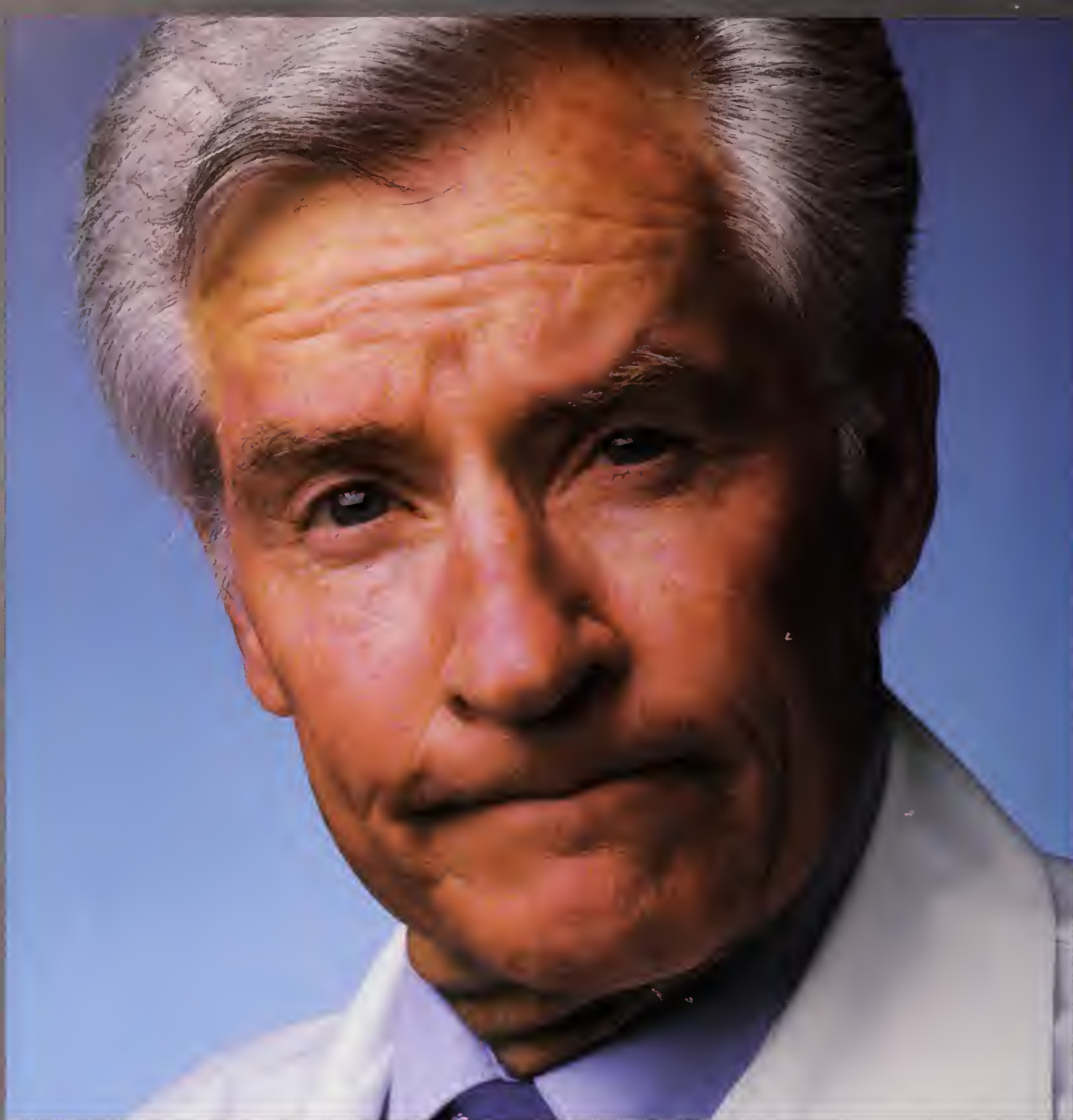
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# Iowa Medicine

December 1984

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Journal of the Iowa Medical Society

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**“SOCIAL PROBLEMS AND  
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**“BIO-ETHICAL CONSIDERATIONS IN  
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## PRESIDENT'S PRIVILEGE



### THE ETHICS OF LESS CARE

**W**HEN LESS is given, who makes the decision? Who gets less care?

At a recent meeting of physicians of the upper midwest, a panel tackled these and other very pertinent questions.

The panel was moderated by John O. Simenstad, M.D., chairman of the Committee on Medicine and Religion of the State Medical Society of Wisconsin. Panelists were a physician, a hospital administrator, a theologian and a legislator.

The panel discussion was based on a booklet prepared by this committee of the State Medical Society of Wisconsin entitled *The Ethics of Less Care*. The booklet contains concrete examples of the clinical situations which physicians face daily, such as should an 84-year-old man, who is active but has some heart problems, have a total hip replacement?

Several of these situations were discussed, as well as what is meant by quality health care. The larger question of how much of our resources society is willing or able to spend on health care was discussed.

If society must look at limiting services, how can this best be done?

It was agreed that not everyone gets the same care. Anthony Eden, a staunch supporter of the British medical system, came to the United States when he needed serious gallbladder surgery.

The pamphlet *The Ethics of Less Care* is available from the State Medical Society of Wisconsin. I recommend it to you along with *The Painful Prescription: Rationing Health Care* by Aaron and Schwartz. This is a thoughtful examination of the British Health System which accounts for 5.6% of the gross national product in England compared with 11% of the GNP in the U.S. These volumes are not enjoyable reading, but they help us understand the problems we as physicians and our society face today.

*John Tyrrell, M.D.*

John E. Tyrrell, M.D.  
President

# Iowa Board of Medical Examiners

*The regular Questions and Answers feature in IOWA MEDICINE is expanded this month to furnish information about the State Board of Medical Examiners. This will supplement the article by Jack L. Dodd, M.D., which appears elsewhere. Dr. Garred is in the private practice of general medicine in Whiting. He is chairman of the BME and is in his second term on the board.*

**T**HIS ISSUE OF IOWA MEDICINE includes an article on the impaired physician. It is written by a former member of the State Board of Medical Examiners. What is your brief reaction?

The article on impaired physicians by Dr. Dodd is well written, accurate, informative and contains scientific data and information that would help any board in carrying out its assigned functions. It is a fine contribution to the board, the profession and the public by a former board member.

TABLE I  
STATE BOARD OF MEDICAL EXAMINERS  
1983-84 ACTIVITY

1. Processed 8,827 permanent license renewals.
2. Issued 710 new licenses.
3. Issued 210 new resident licenses with 235 renewals.
4. Issued 32 new temporary licenses with 6 renewals.
5. Certified 42 physician assistants.
6. Processed 284 certifications and 10,500 verifications of current licenses.
7. Administered 659 exams for licensure to practice medicine and surgery and osteopathic medicine and surgery.
8. Administered 476 EMT and paramedic exams.
9. As of 6/30/84 certified 912 EMT-D, 717 EMT-I, 27 EMT-II and 494 paramedics.
10. Approved one additional training program for a total of 12.

TABLE II

STATE BOARD OF MEDICAL EXAMINERS LEVEL OF ACTIVITY

1982			
1. Complaints received up	28% from	227 to	290
2. Files closed were up	94% from	143 to	278
3. Backlog went up	4% from	456 to	476
4. Sanctions went up	85% from	47 to	87
1983			
1. Complaints received up	33% from	290 to	385
2. Files closed were up	53% from	278 to	425
3. Backlog went down	8% from	476 to	436
4. Sanctions went up	15% from	87 to	100
1984 Through September Board Meeting			
1. Complaints received			356
2. Files closed			350
3. Backlog			442
4. Sanctions			81

The article says the Iowa Board of Medical Examiners is an active body — when compared to other states. Is this accurate? Can you describe the BME workload in terms of investigational activity?

The Iowa BME is an active body. It consists of 5 M.D.s, 2 D.O.s, and 2 consumer members. They meet monthly or more frequently depending on the urgency of problems. The workload is described in Table I and Table II.

What about physician impairment? Has it increased in the past 5 years or so, or is it just being addressed more openly?

As reported to us, physician impairment shows a slight decrease, but, as your question suggests, it is probably more openly discussed and as a result more physicians are now being helped.

It appears an accepted premise that one of every 8 or one of 10, depending on the source,



TABLE III  
STATE BOARD OF MEDICAL EXAMINERS FILE STATUS

1978 FILES ARE ALL CLOSED
1979 ONE FILE REMAINS OPEN
1980 TWO FILES REMAIN OPEN
1981 15 FILES REMAIN OPEN
1982 23 FILES REMAIN OPEN
1983 142 FILES REMAIN OPEN
1984 259 FILES REMAIN OPEN
442 FILES REMAIN OPEN

There are presently 17 licensees who are in a probationary status with the Board and 7 licensees who are under indefinite suspensions.

are "chemically dependent." We are not even scratching the surface with regard to physician population in this state, which is approximately 3,800 physicians.

**Apparently when impairment is detected early and supervision is provided, there is a good chance the physician experiencing problems can be helped. Correct?**

I assume this question relates to the impaired physician who is placed on probation

TABLE IV  
STATE BOARD OF MEDICAL EXAMINERS  
COMPLAINTS AND DISPOSITION

*Discipline:*

Backlog of complaints on 1/1/83	476
Number of complaints in calendar 1983	385
Number of complaints closed in calendar 1983	425
Backlag of complaints on 1/1/84	436
Number of complaints opened to date in 1984	356
Number of complaints closed to date in 1984	349
Backlag of complaints to date in 1984	443

*Disposition of Complaints Closed:*

	1983	1984 To Date
Permanent injunction prohibiting the practice of medicine	1	0
Indefinite suspension	3	1
Two year suspension	0	1
Denial of license	3	1
Voluntary surrender of license	3	4
Two year probations	0	1
Voluntary surrender of DEA registration	0	1
Five year probations	3	2
Three year probations	1	0
\$1,000 fine and restricted practice	1	1
\$800 fine and restricted practice	1	0
Restricted practice	1	0
Letters of warning	83	62
Revocation	0	4
Duplicate files closed	0	4
Doctors deceased	0	4
Referred to other agencies	0	3
Referred for criminal prosecution	0	3
No action	325	260



John L. Garred, M.D.

under surveillance of the Iowa State Board of Medical Examiners. The Dodd article indicates a recovery rate of 84% among physicians on probation with the Board of Medical Examiners. The IMS Assistance Program for Troubled Physicians is exploring ways to improve on this and help more.

**Can you characterize your main concerns as they relate to assuring optimal physician competence in Iowa? Is there anything that would make the BME job easier?**

Main concerns of the BME are physician impairment, indiscriminate and inappropriate prescribing, incompetency, fraud and unethical conduct, the practice of medicine and surgery without license, the documentation of foreign education and training and security of the FLEX examination.

As for making the job easier, disposition of reports received from the Insurance Commissioner could be expedited if physicians would respond to our form letter requesting information as to a malpractice incident in a timely fashion.

A number of problems seen by the Board of Medical Examiners could be resolved locally by physicians, hospitals and county medical

(Please turn to page 527)

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# Impaired Physicians: An Iowa Perspective

JACK L. DODD, M.D.

Ames, Iowa

*A recovery rate of 84% is reported in a study of impaired Iowa physicians on probation by the Board of Medical Examiners. Most of these physicians had substance abuse problems. The author served a 3-year term on the Iowa BME.*

**T**HAT PHYSICIANS suffer the same illnesses they treat should not surprise any one. However, the systematic study of psychiatric illness in physicians is a recent phenomenon. Before the 1973 landmark report of the AMA Council on Mental Illness entitled "The Sick Physician,"<sup>1</sup> interest in studying psychiatrically disabled medical personnel was sporadic and sparse. The reasons for this neglect are not clear; they appear related to the stigmatized nature of the illnesses and a resistance to self-examination in the absence of public pressure.

That AMA Council report may have been more appropriately titled "The Psychiatrically Sick Physician." It dealt with 4 major recommendations:

Dr. Dodd is in the private practice of psychiatry in Ames, Iowa. He served a three-year term on the Iowa State Board of Medical Examiners from 1980 to 1983.

1. Progressively more forceful confrontation of the impaired doctor by his colleagues.

2. Alliance with the doctor's family to bring about change.

3. Enactment of state law to compel treatment.

4. Improved prevention with the development of educational programs all through the medical training process.

Sick doctor laws are a major force in society's effort to deal with psychiatric illness in the medical profession and the tragic consequences it can produce. While state regulatory bodies have always governed the medical profession, the more recent laws specifically expanded their powers. The new laws mandated 3 requirements and one set of protections that affect impaired physicians.

## THREE REQUIREMENTS

First, impairment is defined without the necessity of malpractice. For example, an alcoholic doctor can be declared impaired without evidence he has actually injured someone. The advantage to society is obvious; the avoidance of malpractice is a benefit to the physician also.

Second, examination can be compelled when *prima facie* evidence of impairment is disclosed. State medical boards can designate the examiner and the place of examination. Information obtained by examination cannot be withheld from the medical board. The doctor may, of course, refuse examination but at the peril of losing his license.

Third, treatment can be mandated. Evidence

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF DECEMBER 1984

of a positive response to treatment may be required before the doctor is relicensed. More often cooperative involvement in a treatment program is required for a probated license.

#### PROTECTIONS PROVIDED

Additionally, most sick doctor laws provide a set of protections for the impaired physician. Investigations and hearings are private and information is released to the public in a limited fashion. Evidence arising from the investigation usually cannot be entered into a malpractice or other civil action.

Florida was the first state to enact a sick doctor law in 1969. Iowa enacted its sick doctor law in 1974. All states now have some mechanism for dealing with impaired physicians.

The responsibility to mandate psychiatric treatment has induced regulatory boards and

***"Obviously, if society is going to order impaired physicians into treatment, medical boards must learn what treatments are effective and what results can be expected if they are to protect the public and to aid the impaired."***

the medical profession to attempt to discover what constitutes effective treatment. Obviously if society is going to order impaired physicians into treatment, medical boards must learn what treatments are effective and what results can be expected if they are to protect the public and to aid the impaired. The bold and optimistic assertion of the law that effective treatment be provided has led to an explosion of studies as to what constitutes impairments and what can repair them. These studies have been of 3 general types.

#### THREE TYPES OF STUDIES

First, investigators have made comparisons of mental illness between physicians and laymen. This is to see if there are characteristics that set doctors apart. The best of these studies have been done prospectively over a considerable length of time. Second, researchers have analyzed the treatment experience of certain hospitals that have traditionally treated physicians; e.g., Mayo Clinic, Menninger Clinic, DePaul Rehabilitation Hospital in Milwaukee and Ridgeview Institute in Georgia. Third, analyses have begun of state populations of doctors, in terms of the experience of regulatory boards or designated treatment centers. These studies

have the advantage of working with total populations and allow the observations to be made in the environment in which the illness arises.<sup>15, 20, 21</sup>

A number of interesting and useful observations resulting from the following questions have emerged from these studies: *What are the peculiar psychological characteristics of physicians in general that predispose them to emotional illness? What types of illnesses are the most prevalent among physicians? What treatments are the most effective? What type of physician is at the greatest risk for emotional impairment?*

Physicians have certain psychological characteristics which separate them from the layman and which appear to predispose them to emotional illness. Walton<sup>2</sup> demonstrated that obsessiveness and willingness to defer gratification are common characteristics of physicians. Introversion and neuroticism are also common and correlate with success in medical school. Physicians are more likely to have feelings of inferiority and to have enjoyed overprotection by their parents.<sup>3</sup> Vaillant<sup>4</sup> discovered prospectively that among college graduates, those who go into medicine report a larger percentage of unhappy childhoods and troubled adolescence. This sub-group has more marital difficulties, more drug abuse and more psychiatric care than the rest of their collegiate cohorts.

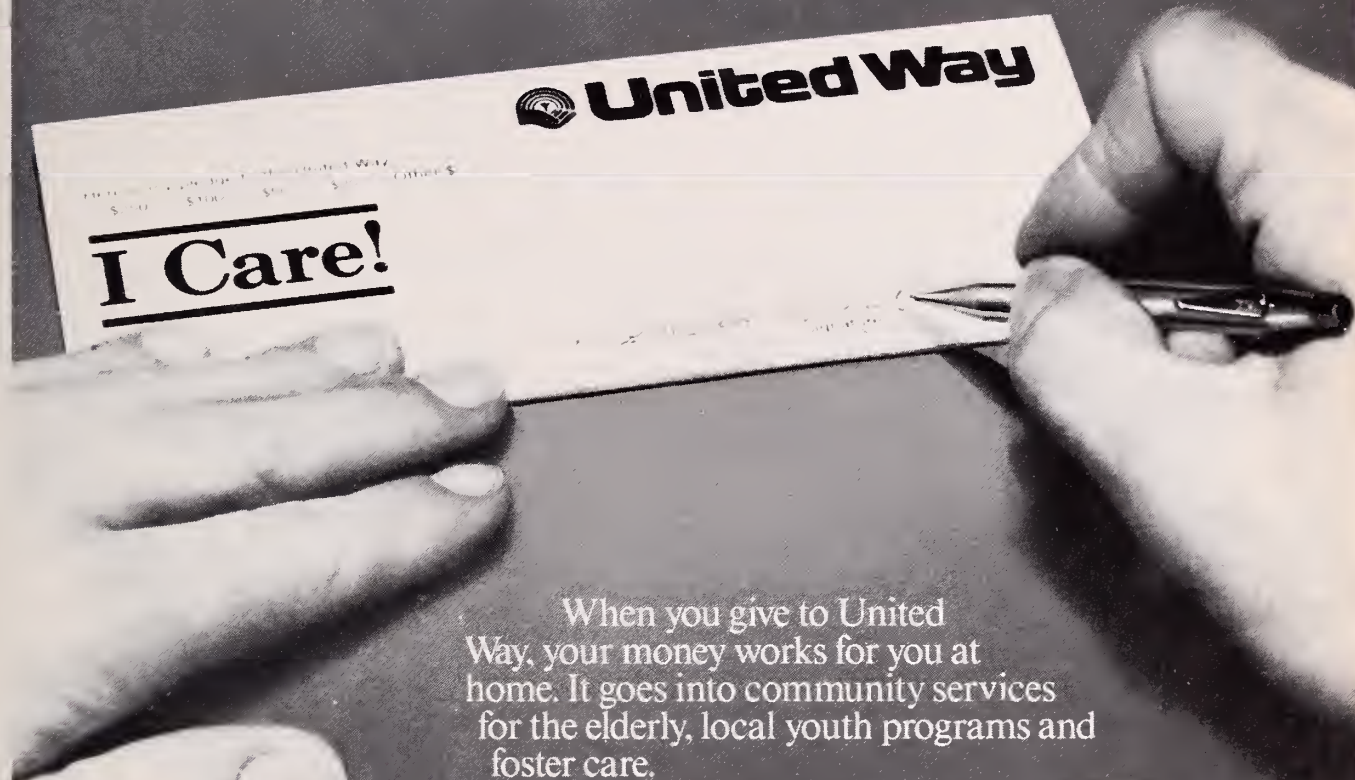
The psychiatric impairment is present throughout the physician's lifestyle:

1. 10% of each medical class was reported lost through attrition, largely emotional, in 1976.<sup>5</sup>
2. 15% of sophomore medical class was reported to have psychiatric illness in 1961.<sup>6</sup>
3. One-half of the medical school graduates were described as in need of psychotherapy.<sup>7</sup>
4. One-fourth of all interns are depressed to the point of having suicidal ruminations.<sup>8</sup>
5. One out of 8 doctors is reported to be chemically dependent.<sup>9</sup>
6. 5% of physicians take their lives. 130 physicians take their lives each year. This is approximately equal to one average-sized graduating class.<sup>10, 11</sup> (Medicine is a risky business.)

Substance abuse is the most common cause of psychiatric impairment among physicians. While the alcoholism rate is the same as the general population, the drug abuse rate in 1964



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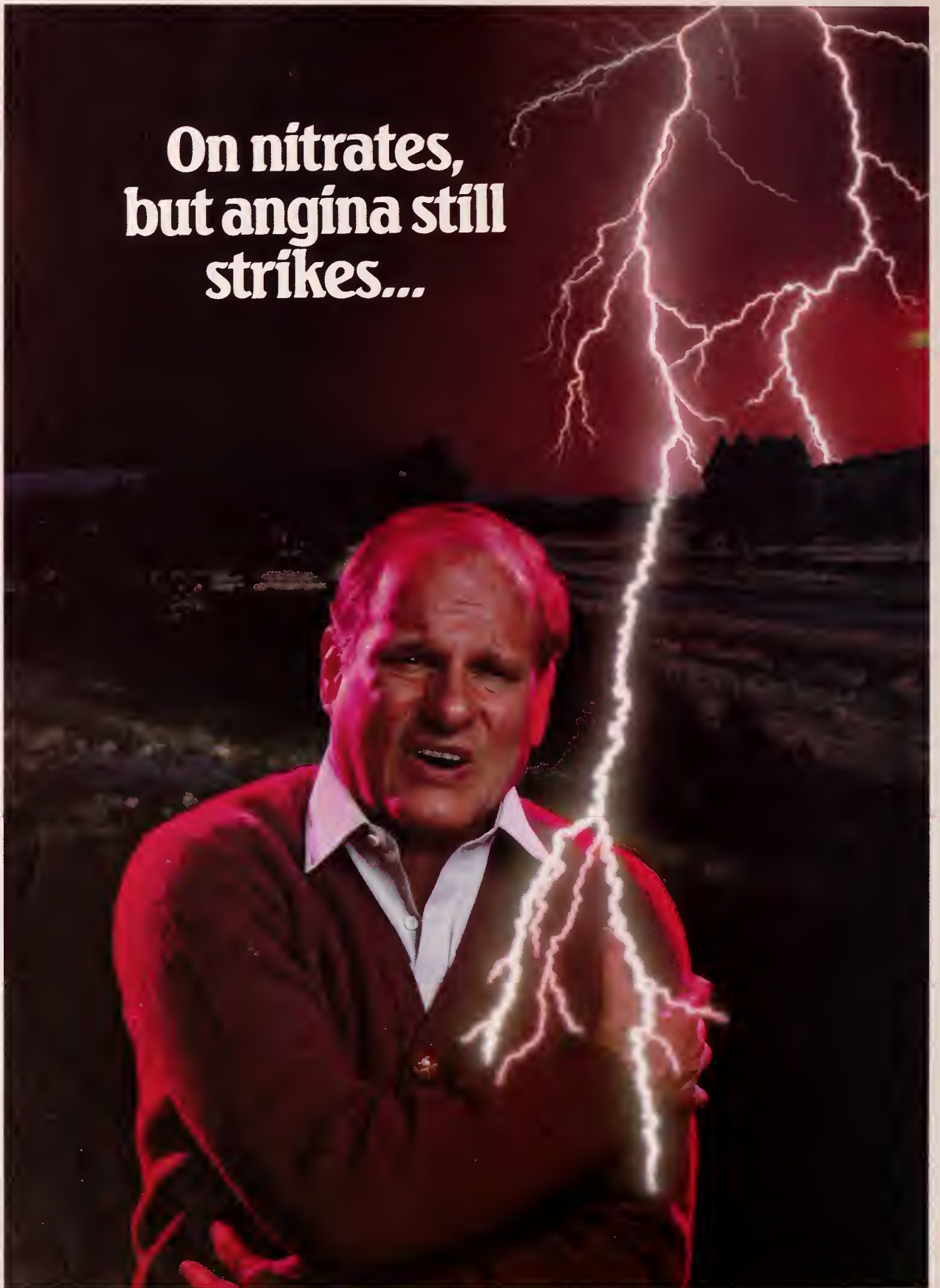
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**Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of overdosage. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, patients should be monitored closely. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function or in patients who have also recently received methyldopa. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patient carefully monitored. ISOPTIN may have an additive hypotensive effect in patients receiving blood-pressure-lowering agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. **Pregnancy Category C:** There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor, and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use.

**Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR<50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%). The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: confusion, paresthesia, insomnia, somnolence, equilibrium disorders, blurred vision, syncope, muscle cramps, shakiness, claudication, hair loss, maculae, and spotty menstruation. Overall continuation rate of 94.5% in 1,166 patients.

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was estimated to be 30 to 100 times that of the general population.<sup>13</sup> This is a major occupational hazard.

Chemical impairment affects all areas of the physician's life but ironically it characteristically affects behavior in the hospital last.<sup>9</sup> This peculiarity no doubt occurs as an effort to avoid scrutiny and confrontation. Physicians rarely seek treatment on their own for chemical dependence. They usually respond with denial and resistance when others confront them. Treatment is usually instituted only after prolonged or intense pressure by family or regulatory bodies.

#### TREATMENT RATE GOOD

Despite the difficulties of detection and institution of treatment, the prognosis for the chemically impaired physician is good if he is treated at least 2 years in a supervised program. Treatment most often consists of at least one month of initial hospitalization followed by at least 2 years of follow-up treatment, i.e., Alcoholics Anonymous or Narcotics Anonymous, outpatient psychotherapy, and psychopharmacology. Over 60% of physicians who enter treatment are able to return to their practice and remain abstinent.<sup>14, 15, 16, 20</sup>

Other types of mental illnesses are generally small among physicians, making up less than 20% of the total. These disorders tend to be episodic affective disorders. Schizophrenia has a low prevalence among physicians. Dementia is a problem in older physicians. These doctors are usually not probated but tend to surrender their licenses. Other types of mental illnesses have a worse prognosis than does chemical dependency.

Risk factors have been delineated. Physicians from lower social classes of origin<sup>17</sup> and students in the upper portion of medical classes are at risk.<sup>7</sup> Only 5% of the chemically dependent physicians come from the lower third of their class. Physicians in primary care areas, i.e., general and family practitioners, internists, pediatricians, and obstetricians, are at a higher level of risk.<sup>4</sup> Students who report an unhappy childhood or troubled adolescence prior to medical school, are at risk for later illness.<sup>4</sup> Female physicians also appear to be at risk for affective disorders. They have a higher suicidal rate than both women in general and female psychologists.<sup>19</sup>

In summary, while physicians suffer all

types of impairment, chemical dependence on central nervous system depressant drugs is the major problem. While detection is difficult, treatment is effective in nearly two-thirds of the cases allowing physicians to return to their practices. Certain individuals are at high risk, especially those who have some manifestation of high drive.

#### SUBJECTS AND METHODS

In progress is an incidence study of physicians who were under probation by the Iowa Board of Medical Examiners on January 1, 1983. The research was conducted while the author served a 3-year appointment on the Board. The research method consisted of a systematic review of the records of 25 physicians on probation at this date. Six of these physicians were excluded from the study since they

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*"Physicians rarely seek treatment on their own for chemical dependence. They usually respond with denial and resistance when others confront them."*

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were placed on probation originally in other states and their Iowa probation was instituted retrospectively. The remaining 19 physicians were the subjects of this study. All were placed on probation while practicing in Iowa during the preceding 6 years.

Evaluation of the probationers' charts was done in a systematic manner for the following information: demographic, educational, and marital history; type of medical practice; history of physical and mental illness; reason for formal complaint; probationary status; medical and psychiatric records; and length of probation. A global rating as to the patient's functioning was made as of January 1, 1983. The physician was considered improved if he had returned to his usual practice and showed no significant recurrence of his original complaint. Assessments were made by reviewing reports of the Board investigators. These reports included random drug sampling of urine and serum, communications between the subject and the Board, required reports from counselors or psychotherapists and an annual appearance before the Board.

#### RESULTS

Eleven of the 19 physicians were placed on  
(Please turn to page 520)

probation for substance abuse either as the sole diagnosis or associated with another psychiatric diagnosis (5 cases). Only 2 physicians were placed on probation for mental illness alone; that is, without evidence of substance abuse. Six physicians were placed on probation for unethical behavior which included insurance fraud, sexual relationships with patients, and dispensing drugs in an unethical manner. Two of the 6 were also thought to have shown incompetence in medical practice. It was apparent from a review of the records of the unethical group that the majority would have warranted a psychiatric diagnosis, usually of a character disorder. (Those doctors dispensing drugs illicitly were suspected of drug abuse themselves even though this was not proven.)

All of the probated physicians were white males and all but one was born in this country; over half were born in Iowa and trained at local professional schools (the University of Iowa in Iowa City, the College of Osteopathic Medicine in Des Moines or Creighton University in Omaha). Four of the probated physicians were osteopaths; the rest were allopaths. (Iowa has an amalgamated Board of Medical Examiners

which is responsible for MDs, DOs and physicians assistants.) Fourteen of the physicians were in primary care practices. Eighteen were practicing at the time of the study, 16 in Iowa. Only 6 belonged to the Iowa Medical Society.

#### LEVEL OF HOSPITALIZATION

All 13 of the physicians who were probated for mental illness had been hospitalized at least once for emotional problems; 8 had been re-hospitalized. All these men had been married at least once, seven were known to have been separated or divorced at least once. Only 4 were known to have a significant physical illness. (It was assumed if complete medical records had been available, this number would have been higher.) The average age when placed on probation was 47 years.

Of the 7 variables for which there are either state or national statistics available for comparison, two differentiate at the .05 level of confidence. Physicians on probation are more likely to be from primary care practices (73% vs. 44%). This agrees with Vaillants finding that doctors from this group are at risk for drug or psychiatric treatment. Also, physicians on probation are less likely to be members of their state medical society (38% vs. 90+%). This supports findings that physicians who are chemically dependent or in other difficulties are more apt to be isolated from colleagues.

These doctors had been on probation for an average of 27 months (2¼ years). The range was from 1 to 70 months. All but one physician were in good standing with the Board at the time of the study. Only in one case was there thought to be a reoccurrence of the original problem. Thus, of the 19 physicians on probation, 17 were practicing and thought to be free of the problem which placed them on probation. (One of the chemically dependent physicians was thought to be using alcohol and a hearing was pending. One of the chronically mentally ill physicians had not been able to return to full practice.) The recovery rate for the chemically dependent physicians was 90%. The recovery rate for the mentally ill without chemical dependency was 50%, and the recovery rate for the total group was 84%.

#### COMMENT

The experience of the Iowa Board of Medical Examiners compares favorably with studies of other groups of impaired physicians. The

(Please turn to page 521)

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majority of impaired physicians in this state are on probation for substance abuse, which is true in the other studies. Their prognosis with prolonged treatment and monitoring is good. Recovery rates of 90% for the chemically impaired physicians, and 80% for all mentally ill physicians, are above the levels reported by the studies in Oregon, Georgia, Wisconsin, and at the Menninger Clinic. The fact that all the physicians in the group placed on probation for unethical behavior were able to continue a monitored practice and were in good standing is significant. This group is usually excluded from studies of impaired physicians even though they appear to have many characteristics in common.

This Iowa group has been followed for an average of only 2¼ years which is a shorter duration than most of the other studies. Also the studies in Georgia, Wisconsin and at Menninger's were of groups that included physicians often referred for treatment because of failure locally, and thus would have an expected poorer outcome. Nevertheless, the 90% rate is a satisfying finding.

The Iowa program differs from the programs using other studies in its reliance on a variety of treatment facilities, both in and out of the state. None of the treatment facilities had a direct connection with the Board of Examiners nor the Iowa Medical Society. Another major difference is the direct monitoring of the probated physician without the use of a separate psychiatric component. (Oregon has used a coordinating psychiatric consultant. California has a system of committees of local consultants. New Jersey is the first state to have a full-time physician director of its Impaired Physicians Program. It is funded primarily from medical practice insurers. Florida and Georgia have part-time directors.)

The plan in Iowa has been for the Board of Medical Examiners to maintain responsibility for supervision and to delegate treatment to local facilities. One of the drawbacks to the Iowa plan is, since the members of the Board volunteer their time, there are very real limitations on the number of impaired physicians who can be adequately supervised. The Iowa Board has had a psychiatrist among its members for the last 5 years.

A brief description of the Iowa Board of Medical Examiners program for dealing with impaired and unethical physicians is in order.

Upon receiving a complaint about a physician, an investigation is begun. Where the complaint appears to have a serious nature, an investigator is dispatched to gather the relevant facts of the matter. If the initial reports indicate evidence of impairment, a physical and psychiatric examination is usually ordered. This examination may be conducted either on an inpatient or outpatient basis. It is usually fixed at a site after consultation with the impaired physician. The examination often includes interviews with family members and work mates. If it produces clear evidence of impairment, a formal hearing is held. If the Board finds at a formal hearing that the physician is indeed impaired, his license is revoked or suspended. To avoid losing his license the impaired physician, before a formal hearing is held and usually on the advice of counsel, enters into an agreement with the Board to accept prescribed treatment and monitoring of his practice in return for a probated license. This agreement customarily contains the following stipulations:

#### BOARD STIPULATIONS

1. An agreement to enter inpatient treatment for at least a month if he has not already done so. This initial period can be extended if thought to be required by the treating physician.
2. A pledge to abstain from alcohol and any psychoactive drug unless prescribed by his physician. The impaired physician must report any medications he is taking to the Board.
3. Submission of blood and urine samples upon request for screening for drugs or alcohol.
4. The surrender of the Federal Controlled Substance Registration number and an agreement to prescribe controlled drugs only in a hospital setting or under a colleague's supervision.
5. An agreement to attend Alcoholics Anonymous or Narcotics Anonymous on a regular basis and to report attendance to the Board.
6. An agreement to follow-up in psychiatric treatment or counselling with an individual deemed appropriate by the Board.
7. Submission of quarterly reports regarding his progress and an annual appearance before the Board. Probation usually lasts for five years

*(Please turn to page 522)*

and failure to comply with any of the stipulations is grounds for a hearing which may lead to revocation of a medical license.

If serious mental illness is present in addition to substance abuse, evidence of recovery is required before a probated license is issued. Usually follow-up psychiatric care and a monitored practice is also required.

While licenses are more likely to be revoked for unethical behavior, offending physicians are often treated in a manner similar to those who are thought to be mentally ill. Pledges must be made to eliminate the offending practice and close monitoring of the practice and supervision is required. Psychiatric supervision is often required if mental illness is thought to have played a part in the unethical behavior. Fines are often levied against those who have been involved in fraud. Where incompetence is detected, retraining and demonstration of proficiency is required before probation. Physicians are required to enter training programs or retake state licensing examinations.

If the estimates that one-eighth to one-tenth

of all physicians are substance abusers, where are the other 400 plus physicians who might be expected to be on probation? The Iowa Board of Medical Examiners is not an inactive one. With 19 disciplinary actions in 1982, its level of activity was twice as high as the national average. The Assistance Program for Troubled Physicians of the Iowa Medical Society no doubt assists some impaired physicians before they come to the attention of the Board of Examiners. Studies of the success of these efforts would be valuable in constructing a more complete picture of physician impairment. The real answer to our question is that physician impairment is difficult to detect. The insidious nature of impairment and the professional silence that surrounds it obscures those who could be aided. Thus, the major hope for aiding the impaired physician continues to be improved early detection and more effective prevention.

#### REFERENCES

The references noted in this paper are available on request either from the author or the editors of *IOWA MEDICINE*.



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# Medicine's New World: Forces for Change

JOHN W. OLDS, M.D.

Des Moines, Iowa

*Outside forces are converging on medical practitioners as never before. Each is planting its seed of change. Legislative actions, court rulings, cost containment pressures are all contributing to the change in the traditional patient-physician relationship. The author provides an overview of today's landscape and concludes that we will have to forget the past and deal with the future.*

**M**EDICINE faces an imperative for change. No longer do patient and physician relate one on one in an office or hospital. In fact, they no longer are patient and physician, but are *consumer* and *provider*. Today we have the world of Medicare, third parties, TEFRA, DRGs, HMOs, IPAs, FTC, DHSS, JCAH, UCR, PPOs, non-physician health care providers and numerous other individuals, organizations, and governmental bodies.

This imperative for change results from 5 forces converging simultaneously on the practice of medicine: 1) *Judicial*, 2) *Legislative*, 3) *Marketing*, 4) *Competitive*, and 5) *Informational*. These forces derive primarily from the heretofore anti-competitive climate of medical practice, and the perception by individual citizens,

business and government that health care costs are out of control. What, then, must change? First, the systems of care, and next, as a hoped-for result, the costs of care. And how are these 5 forces combining to dictate change?

## JUDICIAL FORCES

Judicial forces impacting on medicine stem (a) from corporate liability decisions in response to a series of plaintiff's actions, and (b) from anti-trust decisions based on Sherman Anti-trust, Clayton, and Federal Trade Commission Acts. Corporate liability in medical care dates to the case of *Darling v. Charleston Community Hospital* in 1965 where the court held the hospital had a duty to its patients to oversee the competency of treatment provided by the physicians practicing in the hospital.

Several subsequent cases have recognized the liability of the hospital to patients for failure to exercise reasonable care in granting staff privileges to independent physicians. In one of these cases (*Johnson v. Misericordia Community Hospital*, 1981), a verdict was rendered against not only the involved physician, but against the hospital for granting orthopedic privileges. No review or investigation of the physician was made when he applied for privileges and his application was inaccurate and incomplete. The doctor 1) had had staff privileges denied, restricted, or terminated at several other hospitals; 2) had 10 pending malpractice cases, and 3) was considered incompetent by his peers. The Wisconsin Supreme Court affirmed the decision and held: "A hospital owes a duty to its patients to exercise reasonable care in the selection of its medical staff and in granting specialized privileges. . . . The governing body (has a) duty to

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appoint only qualified physicians and surgeons to its medical staff and periodically monitor and review their competency."

A 1982 case (*Elam v. College Park Hospital*) involved a podiatrist on a hospital staff who was sued for negligence. It was asserted the hospital had a duty to the patient not only to select staff physicians carefully, but also to review and supervise their work and ensure their competency. The court agreed stating, "The community hospital has evolved into a corporate institution, assuming the role of a comprehensive health center ultimately responsible for arranging and coordinating total health care. The patient treated in such a facility receives care from a number of individuals of varying capacities and is not merely treated by a physician acting in isolation."

Anti-trust cases date to 1975 (*Goldfarb v. Virginia State Bar*) and conclude that fee schedules imposed on individuals or between corporations, or prior agreements (conspiracies) between individuals or corporations to set fees or limit competition are illegal.

How are these judicial forces interposed in a hospital setting? Through hospital and medical staff bylaws, as they relate to staff privileges and credentialing. Bylaws are legal documents. They are subject to discovery, scrutiny and adverse use in malpractice litigation, and in cases brought by aggrieved practitioners complaining of medical staff mistreatment. The bylaws must recognize that medical staff members perform their functions at the pleasure of the governing board. In fact, the bylaws and the medical staff organization are functions of the governing board, subject to its approval and modification. The medical staff should not be set up as a separate entity.

#### LEGISLATIVE FORCES

Almost all recent legislative action is directed not at quality, but at cost containment. This applies at both the federal and state levels. The primary legislative focus is on the Medicare and Medicaid programs, with a spill over effect on the private sector. There are many reasons attributed to the push for cost containment in these governmental programs. For example, the Social Security program had 46 workers per benefit recipient when first conceptualized. Currently there are 3.5 workers per recipient, and by 1990 there will be only 1.9. Additional factors, such as poor planning

and technological advances, will result in a Social Security Trust Fund deficit as high as \$300 billion by 1995. The Reagan administration has responded with a Medicare freeze on physician reimbursement in 1985, plus other measures to save some \$2 billion.

The Medicaid program is no better off. States are running out of money, reducing services, and paying barely enough to cover overhead, if they pay at all. Outside government, insurance carriers and private industry are applying pressure aimed at cost containment and threatening the element of quality.

Where, then, are we now? What has been the result of and response to legislative initiatives for cost control? HMOs have long been encouraged by the federal government. They have spread nationally from their few former pockets of popularity. As alternatives, IPAs, and more recently PPOs, have appeared. Federally mandated PSROs have given way to similar mandated PROs. TEFRA is another recent protagonist on the stage. Its health cost containment provisions require development of prospective payment systems for Medicare reimbursement to hospitals, skilled nursing facilities, other providers and some categories of physicians.

Here, too, is the DRG era. Developed at Yale University to aid utilization review, DRGs simply classify patients by diagnosis. When put into effect, each hospital is receiving a pre-determined flat payment based upon which of 467 DRGs fits the Medicare patient at time of discharge, no matter what it actually cost the hospital for that patient.

*There are several implications:*

#### **For hospitals:**

- *Hospitals now are economically at risk, and thus have incentive to provide services costing less than the DRG reimbursement rate.*

- *Each hospital is apt to select a "mission" and provide those services at which it is most efficient. No longer can a hospital be "all things to all people."*

- *Hospitals will begin to market certain services, and as a result "demarket" other services.*

- *There will be potential for cost shifting to private payers.*

- *It will be to the advantage of a hospital to have the less ill patients in each diagnostic category admitted, using fewer services and resources, yet receiving full payment for that DRG.*



## For physicians:

- *Hospitals will develop profiles on physicians to identify procedures and tests used, lengths of stay and relative costs.*

- *Physicians will be closely monitored by PROs and possibly be subject to corrective action or education to reduce costs.*

- *Decisions in the past made by individual physicians may be made collectively by doctors and administrators.*

- *Record keeping will have to be accurate, complete and timely.*

- *There will be more emphasis placed on pre-admission studies.*

- *There will be encouragement for earlier transfer home, to a nursing home, rehabilitation center, or to a step down unit.*

- *Finally, the DRGs may in the near future be applied to physician reimbursement. It is already being done by Blue Cross/Blue Shield in Kansas, and legislative effort is in process to extend DRGs to physician services in the hospital and to all third party payers!*

Where, then, are we going? "With the passage of prospective payment," according to Senator David Durenberger, who chairs the Senate Finance Subcommittee on Health, "some . . . may think the battle is over. In fact, it is just beginning. Prospective payment cannot be the final solution. It must lead to something else. . . . These issues can only be resolved if we take the final step to some form of capitation or voucher. We must ultimately consolidate the payment for all health services — ambulatory and institutional — into a single capitated payment."

The Deficit Reduction Act of 1984 is now operative. By October 1 physicians had to decide between the status of *participating* and *non-participating*. Those in the first category agreed to accept assignment on Medicare patients. Regardless of choice, physicians are subjected to a 15-month Medicare fee freeze.

Nor do legislative forces stop here. The Medicare Voucher Act of 1983 established a voluntary system under which Medicare beneficiaries would elect to receive services through a private health benefits plan, including HMOs, by shopping amongst competing plans, and guaranteeing payment by their voucher, rather than through participation in the present Medicare program. Based on demonstration projects already performed, patient

days per 1000 population can be reduced from somewhere around 4000 to 1800, and convert the hospital insurance trust from a \$300 billion deficit to a \$260 billion surplus by 1995.

## MARKETING FORCES

Due to cost containment initiatives, with considerable legislative incentive, it seems likely, in the future, to paraphrase Richard E. YaDeau, M.D., that "Delivery of health care will be managed, with doctors, hospitals, and ancillary providers organized into distinct economic competitive units, serving enrollees." To be successful, these competitive units will require a spirit of cooperation between trustees, administration, and medical staffs. Such cooperation has been lacking on a widespread basis in the past. Physicians are finding they must make choices between various marketing units, and between competing hospitals, and they are being asked to play an active role in the organizational and marketing (read promotional) aspects of these units. What are these units, or health care delivery systems?

1. **Health Maintenance Organization (HMO).** This is a prepaid capitation entity where the physicians are salaried; the patients are preferably young and healthy and locked in, and the hospitals participate by offering contracts with discounts.

2. **Independent Practice Association (IPA).** This is a physician organized and directed program with those participating agreeing to accept a percent of usual and customary charges. It also has a holdback for patients who may be older and have long standing identification with their physician and hospital.

3. **Health Care Organization (HCO).** This is a subsidiary corporation of a hospital and a component of its medical staff. Primary physicians are capitated, and specialists are paid on a relative scale. Patients will be younger but have a high degree of identification with their primary physician who acts as gatekeeper. The hospital has a defined population of patients. There are fixed dollar payments per 1000 patients served, regardless of services rendered.

4. **Preferred Provider Organization (PPO).** This is an indemnity insurance program in which physicians are paid a discounted fee for service provided under the close scrutiny of peers. The unselected mix of patients in the PPO has the dual option of using the PPO with complete dollar coverage, or going outside the

PPO with a 20%/co-pay. Hospitals are selected for cost effectiveness and are paid usual and customary fees, possibly discounted.

**5. Direct Contracts.** These are arranged between insurance companies or government programs, such as Medicaid/Medicare, and providers, such as a county medical society, group practice, IPA, HMO, clinic or hospital. The providers agree to provide all medical care at a predetermined fixed rate.

#### COMPETITIVE FORCES

Economist Uva Rhinehart has observed, "Doctors have been so busy watching out for socialized medicine, they failed to see capitalistic medicine move in." The current administration's basic philosophical thrust is that open competition will eventually reduce the cost of medical care. What other sources of competition exist?

**1. Increased numbers of physicians.** In 15 years the number of physicians graduated yearly doubled to 18,000, certainly outpacing the increase in total population. In the Des Moines telephone book of 1973, 327 physicians were listed. In 1983, 464 were listed, an increase of over 40%.

**2. Health care practitioners other than physicians (HCPOTP).** In 1910 there was one HCPTOP per physician. In 1983 there were 13. These new competitors include podiatrists, chiropractors, naturopaths, acupuncturists, nurse midwives, nurse practitioners, physicians assistants, psychologists and others. They compete not only for outpatients, but with increasing frequency some are competing for inpatients as well. Item: In Washington, D.C., a new law forbids hospitals to deny clinical privileges or "any category of staff membership" to psychologists, podiatrists, nurse practitioners, midwives, or nurse anesthetists as a class.

**3. Advertising.** Due to FTC actions, and interpretations by The American Medical Association, we are seeing physicians using advertising increasingly. Most ads on the local level so far have been low key; but not all. Will physicians, even those who abhor the idea of advertising, fearing or actually seeing patient numbers and personal income decline, be compelled to advertise?

**4. Surgicenters and emergicenters.** Hospitals, established clinics, and private entre-

preneurs have entered the competition by setting up walk-in neighborhood emergency care clinics. In the Des Moines area, there are at least 10. Well over 1,000 such clinics will be operating in the United States before the end of 1984. One free-standing surgicenter already exists in Des Moines, and a second has been announced for West Des Moines.

**5. Marketing ploys.** Hospitals, clinics and entrepreneurs are doing more than setting up peripheral clinics in their efforts to remain competitive. They are reaching out to their service areas with home health services, continuing medical education course offerings, administrative and technical assistance programs, and other innovations to expand and protect their referral bases.

#### INFORMATIONAL FORCES

John Naisbitt in *Megatrends* notes, "We have shifted from an industrial society to one based on the creation and distribution of information." Naisbitt says the information society is an economic reality, not an intellectual abstraction. He predicts innovations in communications and computer technology will accelerate the pace of change by collapsing the "information float," or the time lapse between sending and receiving information. What are some of the informational forces likely to affect the practice of medicine?

**1. Television and the lay press.** Public awareness and, more importantly, expectations are constantly being changed and molded by soap operas, medical drama shows, medical information programs, daily news programs and medical advice columns, news articles, and weekly reviews of medical literature in newspapers and magazines. Particularly enticing to investigative reporters are areas of controversy, real or imagined, occurring in or between hospitals, or between physicians, or physicians and other health care providers.

**2. The medical, or quasi-medical, press.** Although the traditional subscription-only scientific journals remain an important source of information, they are being challenged by the dozens of unsolicited throwaways that arrive monthly. Some of these have good quality articles.

**3. Continuing medical education.** Everyone believes in it, but not in how it should be done. Some states have already rescinded mandatory CME requirements. From the standpoint of



accredited CME, the previous rather loose standards have been restructured, so future programs qualifying for credit will be based on individual needs. These programs should have clearly stated objectives, and should have a means for effective evaluation.

**4. Computers.** This technology is an integral part of the information revolution. Beyond the data storage and manipulation functions for C.T. scans, radionuclide studies, cardiac monitoring, etc., what role might computers have in medical practice?

*In continuing medical education computers can: 1) assess deficiencies by self-testing; 2) list CME courses available; 3) give on-line computer based instruction; 4) provide case presentations with video-disc modules, and 5) access bibliographic material via MEDLINE.*

*In office management computers can: 1) chart; 2) bill/insurance; 3) schedule; 4) recall patients; 5) do word processing; 6) do practice profiles; 7) do payroll; 8) give patient instruction; 9) keep inventory, and 10) do electronic correspondence.*

*Computers are valuable to connect office and hospital. They can provide: 1) patient census; 2) radiol-*

*ogy studies and results; 3) laboratory studies and results; 4) x-ray and laboratory ordering, and 5) pharmacy ordering.*

#### SUMMARY

These are some of the forces shaping the current and future practice of medicine: *judicial, legislative, marketing, competitive, and informational*. They are real, they are now, and they cannot be ignored. How can those who practice medicine respond, or cope, in order to survive? Surely, in a competitive marketplace, there will be winners and losers.

There is only one answer. Hospitals, boards of trustees, and medical staffs must work together to: 1) assure quality care, 2) meet competition, and 3) control costs. We must define and continually refine a system of care, paying little attention to where we have been, but a great deal of attention to where we are going and how we are going to get there. The practice of medicine is no longer simple arrangement of patient and doctor, with the office and hospital as workshops. It is *Medicine's New World*.

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## QUESTIONS AND ANSWERS

*(Continued from page 515)*

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societies. I am thinking primarily about ethical conduct, elderly physicians who should retire, and troubled physicians who need to be guided into treatment, after-care and AA attendance.

**What are one or two facts all Iowa physicians should know about the BME?**

Here is some basic information probably not well known. The BME members are appointed by the governor and confirmed by the senate; the primary mission is to protect the public. The BME meets the second Thursday every month. The disciplinary committee meets a half-day each month. The BME conducts two FLEX exams per year — in June and December.

The board certifies physician assistants,

paramedics, EMTs and approves physician assistant and advanced care training programs.

The board members expend an inordinate amount of time administering assigned activities. A staff of 14 individuals provides support and includes the executive director, program planner, chief investigator, 4 investigators, an administrative assistant and 5 secretary and clerk personnel. This is a dedicated and effective staff whose professionalism is admirable.

**What closing comments might you offer?**

The Board of Medical Examiners attempts to resolve each problem with complete understanding, reasoned judgment and compassion. With respect to the impaired physicians, the philosophy of the Board is rehabilitation (when appropriate). Our executive office is located in Executive Hills West, 1209 East Court Avenue, Des Moines, Iowa (Telephone 515/281-5171)



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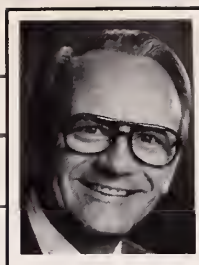


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## COMMENTING EDITORIALY



### LET THE SEASON BE HAPPY

**T**HE HOLIDAY SEASON is a festive time. Eat, drink and be merry is the clarion call. Good times are the rule. We can relax and set aside the usual routine. Yet, we must keep a sense of propriety and be responsible in our celebrations.

Alcohol is a fundamental element of danger in our culture. A recent issue of JAMA (Vol. 252 No. 14, October 12, 1984) emphasizes the problems associated with the ingestion of alcohol. The commentaries by JAMA Editor, George D. Lundberg, M.D., and others are sobering to say the least. The social problems attendant with drinking are staggering. More must and can be done to put a stop to the devastation caused by alcohol.

First and foremost, we must recognize the problem. Many scoff at the programs developed to identify alcoholics. Too frequently the actual existence of alcoholism is unrecognized or denied. Recently, a series of simple questions was proposed to separate alcoholics from normal drinkers.

The 4 test questions developed by John A. Ewing, M.D., of the University of North Carolina School of Medicine, are as follows: (1) Have you ever felt you ought to cut down in your drinking? (2) Have people annoyed you by criticizing your drinking? (3) Have you ever felt bad or guilty about your drinking? and (4) Have you ever had a drink first thing in the morning to steady your nerves; an "eye opener"?

Those giving an affirmative answer to 2 of these questions included all of the acknowledged alcoholics, 97% of the acknowledged heavy drinkers, 92% of those who denied alcoholism and only 4% of the non-alcoholics.

Answering 3 questions affirmatively eliminates all the non-alcoholics, and still points to 95% of the alcoholics and 86% of the heavy drinkers. Dr. Lundberg considers this questionnaire one of the most cost-effective screening and diagnostic tests available to the physician for any disease.

Another study in the same issue of JAMA addresses the problem of drinking and drug abuse among adolescents. Young people who become intoxicated are at a significantly higher risk for alcohol and polydrug abuse and psychologic dependency. John N. Stephen-

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*"The social problems attendant with drinking are staggering. More must and can be done to put a stop to the devastation caused by alcohol."*

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son, M.D., and his colleagues at the University of Wisconsin School of Medicine suggest provisions should be made for follow-up assessment of the young people entering hospital emergency departments while intoxicated.

The most striking revelation in this special JAMA issue was by Kimball I. Maull, M.D., and his associates at the University of Tennessee. Their study of 56 alcohol-impaired drivers, who were injured seriously enough to require hospitalization, revealed that in 32 cases the police officer reported the driver had been drinking, in 52 cases the investigating officer believed the alcohol-impaired driver had caused the crash, and in 33 cases the officer indicated charges would be filed.

However, convictions were attained for only 19 of the suspects (most for reckless driving) and 37 were either not charged or not convicted. There were no convictions for driving under the influence of alcohol. This study emphasizes the need for close scrutiny of our society over its attitudes toward drunken driv-

*(Please turn to page 534)*

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On the following pages is a summary of the insurance coverages which are available from the Iowa Medical Society. All member physicians are invited and encouraged to review this outline to see if and where any of these coverages may fill a void in or supplement an existing individual insurance program. This suggestion is directed particularly to those physicians who are new to membership in the Society.

The Committee on Member Services of the Iowa Medical Society is responsible for the periodic evaluation of these programs to determine their value and receptivity. It is the further duty of the Committee to consider and recommend appropriate new coverages.

Any questions or comments regarding these programs may be directed to the administrator as shown or to the Headquarters of the Iowa Medical Society, 1001 Grand Avenue, West Des Moines, Iowa 50265 (Telephone—515-223-1401; In-WATS—1-800-422-3070).

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  - 3. INCOME PROTECTION ACCIDENT & SICKNESS DISABILITY (Crown Life) — COVERAGE:** New maximum benefits available up to \$10,000 per month. Definition of disability is "your specialty" for full term of contract. Other optional benefits available including "income replacement," residual disability (first in the industry), cost of living adjustment rider, lifetime sickness benefits and future increase option. **SPECIAL FEATURES:** Policy is guaranteed renewable/non-cancellable, meaning right of renewal and rates are guaranteed to age 65. Policy is conditionally renewable between ages 65 and 72 for a physician who continues practice. Waiting periods of 30, 60, 90, 180 or 365 days are available. **ADMINISTRATORS:** The Prouty Company, 2600 72nd Street, Suite "O," Des Moines, Iowa 50322. **INSURANCE COMPANY:** Crown Life, Toronto, Canada. **ELIGIBILITY & HOW TO APPLY:** All IMS members in active practice who are age 60 and under. Apply to The Prouty Company, 1-515-278-5580, or Iowa toll-free, 1-800-532-1105.
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# IOWA MEDICAL SOCIETY MEMBERS

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- 6. OFFICE OVERHEAD EXPENSE DISABILITY — COVERAGE:** Available from \$500 monthly to a new maximum of \$6,000 monthly as a reimbursement for office expenses (rent, employees salaries, utilities, professional liability premiums, etc.). **SPECIAL FEATURES:** Benefits begin after a waiting period of 15 days or 30 days with benefits payable up to 24 months. Premiums are tax deductible. Special renewal features and conversion option automatically included. **ADMINISTRATOR:** The Prouty Company, 2600 72nd, Suite "O," Des Moines, Iowa 50322. **INSURANCE COMPANY:** Commercial Insurance Company, Newark, New Jersey. **ELIGIBILITY AND HOW TO APPLY:** Applicant must be in active practice, under age 60, and a member of the IMS. Apply to The Prouty Company, 1-515-278-5580, or Iowa toll-free, 1-800-532-1105.
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## OTHER SPECIAL BENEFITS

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Other special member benefit programs are sponsored by the Iowa Medical Society and are available to interested member physicians. In addition to the insurance coverages set forth in the preceding list, the Iowa Medical Society has these further benefit programs available:

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TRAVEL PROGRAMS  
AUTO RENTAL DISCOUNTS

GOLD MASTERCARD PROGRAM  
FINANCIAL PLANNING CONSULTATION  
COMPUTER CONSULTATION (Under Study)

Please contact IMS Headquarters if you wish additional information on the programs described above.

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Richard M. Caplan, M.D.

## OUR MAN IN EDUCATION



### TO SEE CLEARLY

**W**HAT DOES it mean to see clearly? As is true of so many questions — especially the difficult ones — the answer can come at “different levels,” responding to different meanings in those tricky symbols we call words. The answer might disclose whether the ocular lens or other refracting media are opaque, or whether the mental interpretation of a visual stimulus corresponds accurately to some external reality that reflects light toward the viewer. My desire to see clearly, in this sense, leads me to use a magnifying lens often when I examine a skin lesion.

But sometimes the verb, to see, means to understand, which may involve mental constructs totally unrelated to vision. Here is a brief passage from a recent article by Dr. Thomas Ferris, chairman of Internal Medicine at the University of Minnesota. Please read it twice, first to apprehend the general meaning, and again to decide what he means the 3 times he uses the word “see.”

*“Although some specialists see only short-term illnesses, most specialists in internal medicine see patients with chronic disease. There is nothing about expertise in a specialty that need dull one’s appreciation of a patient’s emotional problems and needs. Indeed, subspecialty expertise can provide the confidence in caring for patients with complex organic disease that allows one to see through the disease to discover the patient.”*

If we forego the widespread proclivity to echo the stereotype about the less-humane-and-increasingly-technical-care-given-by-subspecialists, then we can likely agree with Dr. Ferris. Focusing specifically on what he means by “see,” we see (notice) that the first

time means “encounter” or “battle,” the second time means “attend” or “care for,” while the third time (“see through the disease”) means “to understand more comprehensively.”

An artist, it is said, is one who sees with unusual clarity and helps the rest of us improve our vision. (This is a modification of Joseph Conrad’s famous statement that the function of art is to help us *see*.) For example, the novelist/essayist John Updike recently wrote, “I noticed a man about my age with a bald head — not a healthy luminous baldness but the unnatural gauzy baldness that chemotherapy induces.” Only after I read that did I make sense of a clinical detail I had seen many times, but never interpreted fully. Chemotherapeutic drugs, by drastically slowing growth, cause the long hairs of the scalp, which spend most of their long lifespan growing, to weaken and break off. The short (vellus) hairs spend most of the time just resting, and therefore their shafts don’t become weakened by the drug’s influence. (Notice, also, the fresh imagery Updike evokes by contrasting “luminous” with “gauzy” baldness.)

Sometimes more complete or multifaceted understanding means more penetrating insight or even a radically different awareness.

For example, a recent article, in fun, offered these definitions:

**Gossip** — someone who returns from the beach with a sunburned tongue.

**Optimistic** — taking a camera and a frying pan on a fishing trip.

The anonymous author of those definitions referred to Ambrose Bierce’s *The Devil’s Dictionary* (1911) and its definitions of “alone” as “being in bad company,” and “positive” as “mistaken at the top of one’s voice.” The reminder led me to my own copy of Bierce, where every page displays the scintillating

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

(Please turn to page 534)

## OUR MAN IN EDUCATION

(Continued from page 533)

awareness of one who saw *not* as through a glass darkly. For example:

**Mouse** — an animal which strews its path with fainting women.

**Physician** — one on whom we set our hopes when ill, and our dogs when well.

**Grave** — a place in which the dead are laid to await the coming of the medical student.

**Handkerchief** — a small square of silk or linen . . . serviceable at funerals to conceal the lack of tears.

**Amnesty** — the state's magnanimity to those offenders whom it would be too expensive to punish.

**Diplomacy** — the patriotic art of lying for one's country.

**Diagnosis** — a physician's forecast of disease by the patient's pulse and purse.

**Die** — the singular of "dice." We seldom hear the

word, because there is a prohibitory proverb, "Never say die."

**Intimacy** — a relation into which fools are providentially drawn for their mutual destruction.

If it strikes you that Bierce "sees" as a cynic, you can check your perception against Bierce's own definition: "A blackguard whose faulty vision sees things as they are, not as they ought to be."

## COMMENTING EDITORIALY

(Continued from page 531)

ers. Numerous factors are discussed in the article about the reasons for failure to convict these menaces to humanity. Breakdowns in the process of our judicial system are prominent. There is the matter of blood alcohol concentrations determined by the medical staff. They are often inadmissible as evidence to support charges of driving while under the influence of alcohol. A new look is needed as to the way the courts accept evidence obtained by competent sources.

In this holiday season, be mindful that drinking and driving is a serious matter; emphasize this to those around you. We should do all we can as informed professionals to make the streets and highways off-limits to the drinking driver. The innocent victims of this national disgrace pay an immeasurable price. The problem drinker must be identified and rehabilitated. The adolescent who becomes intoxicated must be recognized and helped to avoid a future life marred by the effects of alcohol and drugs.

The medical profession is in a unique position to initiate measures to turn the problem around, to recognize and assist patients who have a problem; and set a good example ourselves regarding the use of alcohol. "The measure you give is the measure you will receive with something more besides." (Mark 4:24, New English translation).

What a gift we have for our patients and friends. Let us do our utmost during the holiday season for our fellow humans. May the holidays be filled with good cheer and happiness, in the New Year, and for years to come. — M.E.A.

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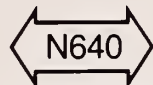


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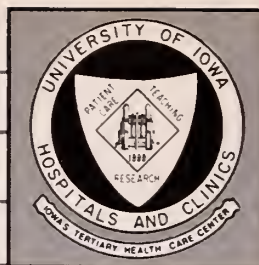
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# DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

## DRUG MANAGEMENT OF ADULT VASCULAR HEADACHES (MIGRAINE AND CLUSTER HEADACHE):

### Part II — Prevention of Attacks

#### MIGRAINES

(a) *Identify possible trigger factors.* As noted previously in part I the identification of trigger factors is crucial in the prevention of migraine.

(b) *Drug management.* The preventive medication of choice usually is propranolol. The contraindications are those of beta blocking agents (e.g., asthma, congestive heart failure, peripheral vascular disease, diabetes, hypothyroidism, etc.).

Propranolol effectively reduces the frequency of migraine attacks. The mechanism of action of propranolol in migraine is not fully understood. Its effect is not likely to be explained by peripheral beta blockage. The drug does interfere with serotonin metabolism at several levels and this may prove to be its principal mechanism of action in migraine.<sup>1</sup> Propranolol is administered orally twice or 3 times per day. The dosage should be determined individually (effective dosages for adults vary between 40 and 320 mg per day) by gradual increases, usually starting with 40 to 80 mg per day in adults. Starting at a low dosage reduces the common major side effects (fatigue and lethargy). A trial with propranolol should be continued for at least 2 to 3 months at the

highest level of tolerance, before it is considered a failure. Improvement often does not begin until the third month of therapy. The earliest signs of effectiveness are a decrease in the severity of individual attacks or better responsiveness to symptomatic medication during an acute attack, rather than an actual decrease in the frequency of episodes. Discontinuation should be gradual (over several days depending on the total daily amount).

The characteristics of the history may mandate a different choice of first medication, as follows:

1. *Migraine attacks triggered by tension or closely associated with tension headaches.* The medication of choice is amitriptyline. This tricyclic antidepressant reduces the frequency of migraine events independent of its antidepressant activity.<sup>2</sup> It is usually effective in dosages ranging from 50 to 100 mg per day given as a single dosage at bedtime. Like propranolol, the mechanism of action of amitriptyline is not fully understood and is probably multifactorial. Interference with serotonin reuptake may well be the cause for its effectiveness in migraine, since tricyclic antidepressants with less serotonergic activity do not prevent migraine attacks.

Major side effects are due to anticholinergic activity and sedation. The latter can be overcome by having the patient take the medication at night, not less than 8 hours before wake up time, and by starting at low dosages followed by weekly increases. Orthostatic hypotension and weight gain are 2 other undesirable side effects.

This medication, as with propranolol, should be used for at least 2 months, at the higher dosage, before it is considered ineffective.

(Please turn to page 538)

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## DRUG THERAPY REVIEW

(Continued from page 536)

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tive. It should not be abruptly discontinued (taper over several days).

2. *Menstrual migraine.* The term refers to those migraineurs who experience migraine attacks *exclusively* in relation to the menstrual period. Naproxen and bellergal are first-choice medications.

Naproxen, a nonsteroidal anti-inflammatory agent which interferes with prostaglandin synthesis, reduces the frequency of migraines when used orally in 2 or 3 divided daily dosages of 250 mg each.<sup>3</sup> Its mode of action is possibly related to activity on prostaglandins. It has few side effects, the principal one being gastric discomfort. In patients in whom the menstrual period and headache attacks are

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***"Identify possible trigger factors. As noted previously in Part I the identification of trigger factors is crucial in the prevention of migraine."***

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regular and predictable, naproxen can be used during the symptomatic period only. It should be started approximately 1 week before the migraine "is due" and continued for another 3 to 5 days.

Bellergal is a combination of the vasoconstrictor ergotamine tartrate (0.3 mg), the sedative phenobarbital (20 mg), and a parasympathomimetic inhibitor bellafoline (0.1 mg). Bellergal-S has the same active ingredients present but twofold greater amounts. Bellergal can be used orally, twice a day, during the week preceding the migraine attack and during the following 3 to 5 days. Contraindications are those of its components. While using this medication, *no additional ergotamine-containing preparations should be used*, because of the danger of ergotamine overdosage.

### OTHER ANTIMIGRAINE MEDICATIONS

Methysergide, an antagonist of the peripheral actions of serotonin, is one of the oldest preventive medications for migraine. It is unlikely that the peripheral antiserotonergic activity is the mode of antimigraine action. The

drug possibly acts as a serotonin agonist at presynaptic autoreceptor or postsynaptic receptor level.<sup>4, 5</sup> This is an extremely effective preventive medication when used orally, in divided dosages of 2 to 8 mg per day. However, this medication has serious complications, such as retroperitoneal fibrosis with secondary ureteral obstruction possible, if used continuously for long periods of time. It is necessary to interrupt the medication for 4 weeks, after every 6 months of continuous use. During the last month the medication should be slowly tapered rather than abruptly discontinued. The preparation should not be used in patients with peripheral vascular or cardiovascular disease and the necessity of concomitant use of ergotamine for treatment of acute attacks should be carefully considered and kept to a minimum.

Cyproheptadine, an antihistaminic with serotonergic activity, can be used to prevent migraine. Its central serotonin agonist properties are similar to those of methysergide.<sup>6</sup> In addition, it has antiplatelet aggregation properties which might play a role in its effectiveness. Although much less effective than methysergide, cyproheptadine does not have the risk of causing fibrotic changes. For this reason, we think it should be used before considering methysergide. Cyproheptadine is usually given orally in 3 dosages of 4 mg each. Some patients may need higher dosages, up to 16 or 20 mg per day. Major side effects are sedation and weight gain. Sedation can be avoided by starting with only 4 mg per day and slowly increasing the daily amount.

Monoaminoxidase inhibitors were first used because they counteracted the low levels of serotonin found during migraine attacks. But the beneficial effects of these substances are not correlated with increases in serotonin level.<sup>7</sup> The cause for their effectiveness remains unknown. Phenelzine is the MAO inhibitor more frequently used in migraine. Given orally in doses of 15 mg 3 times per day, it can be very effective. The main problem with this drug is the interaction with sympathomimetic medications and with foods having a high tyramine content (i.e., wines, cheese, liver). Patients should have a full understanding of the dietary and drug limitations before using this type of preparation.

(Please turn to page 539)



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## Motrin is priced lower than Clinoril, Feldene, or Naprosyn.

The price of *Motrin* Tablets to pharmacies has been reduced as much as 35%. Patients taking the average dosage should now pay less for therapy with *Motrin* Tablets than for almost any other nonsteroidal anti-inflammatory drug you prescribe...less, for example, than for Clinoril, Feldene, or Naprosyn. And, of course, all strengths of *Motrin* Tablets continue to be available by prescription only.

Please turn the page for a brief summary of prescribing information.

**Motrin**<sup>®</sup> 400 & 600mg TABLETS  
ibuprofen

Good medicine...good value

### Motrin® Tablets (ibuprofen)

**Contraindications:** Anaphylactoid reactions have occurred in individuals hypersensitive to Motrin Tablets or with the syndrome of nasal polyps, angioedema and bronchospastic reactivity to aspirin, iodides, or other nonsteroidal anti-inflammatory agents.

**Warnings:** Peptic ulceration and GI bleeding, sometimes severe, have been reported. Ulceration, perforation and bleeding may end fatally. An association has not been established. Use Motrin Tablets under close supervision in patients with a history of upper gastrointestinal tract disease, after consulting ADVERSE REACTIONS. In patients with active peptic ulcer and active rheumatoid arthritis, try nonulcerogenic drugs, such as gold. If Motrin Tablets are used, observe the patient closely for signs of ulcer perforation or GI bleeding.

Chronic studies in rats and monkeys have shown mild renal toxicity with papillary edema and necrosis. Renal papillary necrosis has rarely been shown in humans treated with Motrin Tablets.

**Precautions:** Blurred and/or diminished vision, scotomata, and/or changes in color vision have been reported. If these develop, discontinue Motrin Tablets and the patient should have an ophthalmologic examination, including central visual fields and color vision testing.

**Fluid retention and edema** have been associated with Motrin Tablets; use with caution in patients with a history of cardiac decompensation or hypertension. In patients with renal impairment, reduced dosage may be necessary. Prospective studies of Motrin Tablets safety in patients with chronic renal failure have not been done.

Motrin Tablets can inhibit platelet aggregation and prolong bleeding time. Use with caution in persons with intrinsic coagulation defects and on anticoagulant therapy.

Patients should report signs or symptoms of gastrointestinal ulceration or bleeding, skin rash, weight gain, or edema.

Patients on prolonged corticosteroid therapy should have therapy tapered slowly when Motrin Tablets are added.

The antipyretic, anti-inflammatory activity of Motrin Tablets may mask inflammation and fever.

As with other nonsteroidal anti-inflammatory drugs, borderline elevations of liver tests may occur in up to 15% of patients. These abnormalities may progress, may remain essentially unchanged, or may be transient with continued therapy. Meaningful elevations of SGPT or SGOT (AST) occurred in controlled clinical trials in less than 1% of patients. Severe hepatic reactions, including jaundice and cases of fatal hepatitis, have been reported with ibuprofen as with other nonsteroidal anti-inflammatory drugs. If liver disease develops or if systemic manifestations occur (e.g. eosinophilia, rash, etc.), Motrin should be discontinued.

**Drug interactions.** Aspirin: used concomitantly may decrease Motrin blood levels.

Coumarin: bleeding has been reported in patients taking Motrin and coumarin.

**Pregnancy and nursing mothers:** Motrin should not be taken during pregnancy or by nursing mothers.

**Adverse Reactions:** The most frequent type of adverse reaction occurring with Motrin is gastrointestinal of which one or more occurred in 4% to 16% of the patients.

#### ***Incidence Greater than 1% (but less than 3%)—Probable Causal Relationship***

**Gastrointestinal:** Nausea\* epigastric pain\* heartburn\* diarrhea, abdominal distress, nausea and vomiting, indigestion, constipation, abdominal cramps or pain, fullness of GI tract (bloating and flatulence). **Central Nervous System:** Dizziness\* headache, nervousness. **Dermatologic:** Rash\* (including maculopapular type), pruritus. **Special Senses:** Tinnitus. **Metabolic/Endocrine:** Decreased appetite. **Cardiovascular:** Edema, fluid retention (generally responds promptly to drug discontinuation; see PRECAUTIONS).

#### ***Incidence less than 1%—Probable Causal Relationship\*\****

**Gastrointestinal:** Gastric or duodenal ulcer with bleeding and/or perforation, gastrointestinal hemorrhage, melena, gastritis, hepatitis, jaundice, abnormal liver function tests; **Central Nervous System:** Depression, insomnia, confusion, emotional lability, somnolence, aseptic meningitis with fever and coma. **Dermatologic:** Vesiculobullous eruptions, urticaria, erythema multiforme, Stevens-Johnson syndrome, alopecia. **Special Senses:** Hearing loss, amblyopia (blurred and/or diminished vision, scotomata, and/or changes in color vision) (see PRECAUTIONS). **Hematologic:** Neutropenia, agranulocytosis, aplastic anemia, hemolytic anemia (sometimes Coombs positive), thrombocytopenia with or without purpura, eosinophilia, decreases in hemoglobin and hematocrit. **Cardiovascular:** Congestive heart failure in patients with marginal cardiac function, elevated blood pressure, palpitations; **Allergic:** Syndrome of abdominal pain, fever, chills, nausea and vomiting, anaphylaxis; bronchospasm (see CONTRAINDICATIONS). **Renal:** Acute renal failure in patients with pre-existing significantly impaired renal function, decreased creatinine clearance, polyuria, azotemia, cystitis, hematuria. **Miscellaneous:** Dry eyes and mouth, gingival ulcer, rhinitis.

#### ***Incidence less than 1%—Causal Relationship Unknown\*\****

**Gastrointestinal:** Pancreatitis; **Central Nervous System:** Paresthesias, hallucinations, dream abnormalities, pseudotumor cerebri; **Dermatologic:** Toxic epidermal necrolysis, photoallergic skin reactions; **Special Senses:** Conjunctivitis, diplopia, optic neuritis; **Hematologic:** Bleeding episodes (e.g., epistaxis, menorrhagia); **Metabolic/Endocrine:** Gynecomastia, hypoglycemic reaction; **Cardiovascular:** Arrhythmias (sinus tachycardia, sinus bradycardia); **Allergic:** Serum sickness, lupus erythematosus syndrome, Henoch-Schonlein vasculitis; **Renal:** Renal papillary necrosis.

\*Reactions occurring in 3% to 9% of patients treated with Motrin. (Those reactions occurring in less than 3% of the patients are unmarked.)

\*\*Reactions are classified under "Probable Causal Relationship (PCR)" if there has been one positive rechallenge or if three or more cases occur which might be causally related. Reactions are classified under "Causal Relationship Unknown" if seven or more events have been reported but the criteria for PCR have not been met.

**Overdosage:** In cases of acute overdosage, the stomach should be emptied. The drug is acidic and excreted in the urine so alkaline diuresis may be beneficial.

**Dosage and Administration:** Rheumatoid arthritis and osteoarthritis. Suggested dosage is 300, 400, or 600 mg t.i.d. or q.i.d. Do not exceed 2400 mg per day. Mild to moderate pain: 400 mg every 4 to 6 hours as necessary.

**Caution:** Federal law prohibits dispensing without prescription.

MED B-7-S

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Kalamazoo, Michigan 49001



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CAN KILL A FRIENDSHIP**

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Calcium channel blockers have recently been added to the migraine armamentarium and have promising results although their use should be considered experimental.<sup>8</sup> Divided dosages of either nifedipine (30 to 60 mg per

*"Most preparations used to prevent migraines can prevent cluster headaches. Their efficiency, however, tends to be less."*

day) or verapamil (up to 240 mg per day) can reduce the frequency of migraine attacks. The most serious side effect is hypotension.

#### CLUSTER HEADACHES

Most preparations used to prevent migraines can prevent cluster headaches. Their efficiency, however, tends to be less. Methysergide is an exception because it is usually effective in aborting a cluster of cluster headaches.

In the prevention or interruption of cluster headaches, the *recurrent cluster headaches* (those clusters which occur occasionally for limited periods of time, usually a few weeks), should be considered separately from the *chronic cluster headaches* (those which occur continuously for months or years).

(a) *Recurrent Cluster*. Methysergide is a useful medication. Steroids: Prednisone can terminate a cluster period in as rapidly as 24 hours after initiation of therapy.<sup>9</sup> It is often given in an initial dosage of 40 to 60 mg PO a day and rapidly tapered over a 2-week period. The preventive effect of steroids disappears as soon as the drug is discontinued; therefore, its usefulness is limited to short-lasting clusters.

(b) *Chronic Cluster*. Lithium Carbonate, the first choice for chronic cluster, can stop a cluster of headaches during the first week of medication.<sup>10</sup> It is used orally and the starting dosage is 300 mg twice per day. Most patients respond to this amount but some may require dosages of 900 mg or rarely of 1,200 mg per day. Serum lithium levels should be obtained prior to increasing the daily amount so as not to allow the serum level to exceed 1.2 mEq/l, measured at 8 hours after the last intake.

The use of lithium carbonate is contraindicated in patients with severe cardiovascular or renal disease, severe dehydration, or in pa-

tients on diuretic medication. Otherwise, lithium carbonate appears to be a safe medication, particularly given the low dosages used in the treatment of cluster headaches. The most common side effects are gastrointestinal disturbances, which can be avoided by starting at low dosages and gradually increasing daily intake, and initial occipital headaches which are easily distinguishable from the cluster headaches. Hypothyroidism may develop during prolonged use.

(c) *Chronic Paroxysmal Hemicrania*. This is an atypical form of cluster headache characterized by a persistent, vascular pain and by superimposed jabs of neuralgic pain, which can vary in location. Women are more affected than men. This form of clusterlike headache is responsive to indomethacin<sup>11</sup> in divided oral dosages of 25 mg 3 times per day. Most common side effects are gastrointestinal.

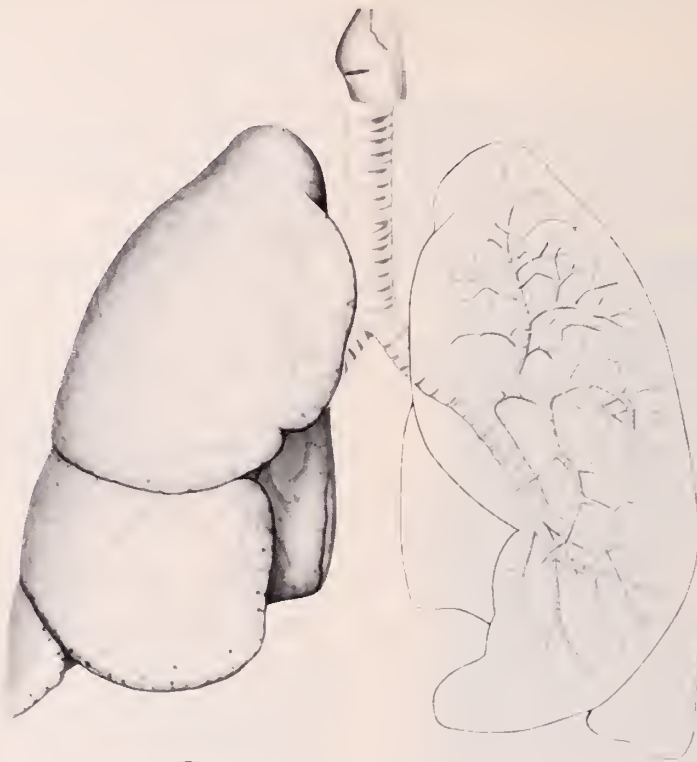
#### USE OF ANTIMIGRAINE AGENTS IN PREGNANCY

Most of the medications used in the management of migraine and cluster headaches are not recommended during pregnancy. Some, such as ergotamines, are absolutely contraindicated. The management of pregnant migraineurs should be done in cooperation with a gynecologist. Often, all that is advisable is the treatment of the acute attack, by sedation, using phenergan (50 mg to 75 mg IM). Behavior modification techniques, for instance, progressive relaxation or biofeedback, always a useful additional tool, can be extremely helpful particularly since migraine often improves during pregnancy. — HANNA DAMASIO, M.D., ASSOCIATE PROFESSOR, DEPARTMENT OF NEUROLOGY.

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# Consider the causative organisms...



## Cecilor<sup>®</sup> cefactor

### 250-mg Pulvules<sup>®</sup> t.i.d.

## offers effectiveness against the major causes of bacterial bronchitis

*H. influenzae*, *H. influenzae*, *S. pneumoniae*, *S. pyogenes*  
(ampicillin-susceptible) (ampicillin-resistant)

**Brief Summary** Consult the package literature for prescribing information.

**Indications and Usage.** Cecilor<sup>®</sup> (cefactor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

**Lower respiratory infections** including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta hemolytic *Streptococcus*).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cecilor.

**Contraindication.** Cecilor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings.** IN PENICILLIN SENSITIVE PATIENTS. CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS. AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS INCLUDING ANAPHYLAXIS TO BOTH DRUG CLASSES.

Antibiotics including Cecilor should be administered cautiously to any patient who has demonstrated some form of allergy particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad spectrum antibiotics including macrolides, semisynthetic penicillins, and cephalosporins; therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life threatening.

Treatment with broad spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, manage-

ment should include sigmoidoscopy, appropriate bacteriologic studies, and fluid electrolyte and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions.** **General Precautions.** — If an allergic reaction to Cecilor<sup>®</sup> (cefactor, Lilly) occurs, the drug should be discontinued and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids. Prolonged use of Cecilor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies on in-transfusion cross matching procedures when antioglobulin tests are performed on the minor side or on Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cecilor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cecilor, a false positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest<sup>®</sup> tablets, but not with Tes-Tape<sup>®</sup> (Glucose Enzymatic Test Strip, USP, Lilly).

Broad spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy.** **Pregnancy Category B.** Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum

human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cecilor<sup>®</sup> (cefactor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers.** — Small amounts of Cecilor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.16, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Cecilor is administered to a nursing woman.

**Usage in Children.** — Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions.** Adverse effects considered related to therapy with Cecilor are uncommon and are listed below. Gastrointestinal symptoms occur in about 2-5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1-5 percent of patients and include morbilliform eruptions (1 in 100), pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis, arthralgia, and frequently fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cecilor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have

occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients); and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain.** — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic.** — Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic.** — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal.** — Slight elevations in BUN or serum creatinine, less than 1 in 500 or abnormal urinalysis, less than 1 in 200.

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**Note.** Cecilor<sup>®</sup> (cefactor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285.

Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630.





## NUTRITIONAL CONSIDERATIONS OF OSTEOPOROSIS

**E**ACH YEAR 1.3 million fractures in people 45 and older are attributed to osteoporosis.<sup>1</sup> Osteoporosis is a disease of the skeleton characterized by a loss of bone volume and density and 1 or more fractures.<sup>2</sup>

### BONE METABOLISM THEORY

Bone remodeling, or the destruction and reconstruction of bone tissue, is a continuous process. Total bone volume includes bone cavities under construction as well as mineralized bone tissue.<sup>3</sup> The normal skeleton may include some bone tissue which is not fully calcified. This is especially true during periods of rapid growth.

The cause of age-related osteoporosis continues to evade investigators, as does a universally accepted therapy for osteoporosis, including nutrition management. Therefore the recommendations about prevention and diet therapy in this newsletter are conservative and do not reflect treatments which may be meeting some current experimental success.

### OSTEOPOROSIS AND AGING

Osteoporosis may be drug induced or related to a disease like cancer, hyperparathyroidism, and alcoholism.<sup>4</sup> It may be age-related, caused by the physiologic changes of aging. The disease represents a culmination of years of either increased bone loss or decreased bone reconstruction. The result is a net bone loss which causes structural failure or fracture. Researchers have found that age related bone loss starts in Americans in their late 30's or 40's.<sup>2</sup>

Cross cultural studies show that this trend is

international and occurs in both sexes in conjunction with different lifestyles.<sup>5</sup> Bone loss has been shown to be twice as great in females as in males.<sup>5</sup> The loss accelerates dramatically with menopause.<sup>2</sup> Decreased estrogen production is probably the critical factor in menopause causing increased bone loss.<sup>6</sup> Estrogen replacement therapy has been used to delay or slow down bone loss.<sup>7-11</sup>

Not all women who lose bone rapidly after menopause develop osteoporosis. This suggests the untested hypothesis, achieving a large bone mass, is an important factor in the decreased occurrence of fractures.<sup>12, 13</sup>

### RISK FACTORS FOR LOW BONE MASS BEFORE MATURITY

#### *Heredity*

Race and sex are known to play a significant role in skeletal volume and density. Blacks have greater bone density than whites<sup>12, 14, 15</sup> and men have denser skeletons than women.<sup>14-16</sup> Thinner women lose more bone than heavy women. Whether this is genetic or associated with body composition is not known. Tall stature has also been associated with decreased bone loss.<sup>5</sup> Larger bone masses are associated with lower fracture rates. Lactase deficiency in white women has been associated with osteoporosis, but this may be due to a low milk and calcium intake.<sup>17</sup> Individual genetic differences undoubtedly play a significant role as well.

#### *Physical Activity*

Total body calcium, 1 indicator of bone

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## STATE DEPARTMENT OF PUBLIC HEALTH

(Continued from page 541)

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mass, has been shown to be higher in athletes.<sup>14, 18</sup> But the opposite effect, decreased bone mineral content, has also been shown in sports women who were not menstruating.<sup>19</sup> While the preventive benefit of higher than normal activity remains to be proven, researchers have clearly shown that greatly reduced physical activity does cause a

*"A decline in estrogen levels whether due to menopause or removal of the ovaries causes an increase in bone turnover. An accompanying change in bone cell metabolism causes less bone to be replaced.<sup>12</sup> As bone metabolism changes with age and with menopause, so does calcium metabolism."*

fall in bone mass. For example, extended bed rest is associated with decreased bone mineral content,<sup>20</sup> as is weightlessness in space.<sup>14</sup>

### *Diet in Childhood and Young Adulthood*

The relationship between diet during growth and osteoporosis is not well defined. Dietary allowances for numerous nutrients, especially calcium and Vitamin D, have been established to assure that bone growth and development will be adequate to prevent bone weakness during childhood and young adulthood. However, whether these allowances will provide for sufficient volume and mass to prevent osteoporosis in later life is not known.

### *Calcium Consumption*

Epidemiologic research relating calcium intake to bone mass and fracture rate in 40 year old Americans and older has produced conflicting results. In some, high calcium intake has been associated with higher bone mass and lower fracture rate in both males and females.<sup>21</sup> Other epidemiologic researchers have not found calcium intake to be related to bone mass.<sup>5</sup> One complicating factor in interpreting research on calcium is that Vitamin D intake may also be manipulated, thus confounding interpretation of the results.

### *Dietary Protein*

High levels of dietary protein in young males cause increased urinary excretion and may play a role in the development of osteoporosis in later life.<sup>22, 23</sup> See the nutritional recommendations for protein at the end of this article.

### *Phosphorus, the Unsupported Theory*

Because calcium and phosphorus can combine to form an insoluble compound, some researchers have said high dietary phosphorus to calcium ratios may interfere with calcium absorption. A recent study of free-living males from age 34 to 71 years, who had phosphorus to calcium ratios as high as 2.7/1, does not support this theory.<sup>24</sup> A strictly controlled metabolic unit study of men from 38 to 65 years old, also failed to show a decrease in calcium absorption with diets containing 2000 mg per day of phosphorus. Calcium intakes in this study ranged from 200 to 2700 mg per day.<sup>25</sup> The balance study also found that higher phosphorus intakes resulted in a significant decrease of urinary calcium during all calcium intakes.<sup>26</sup>

### RISK FACTORS FOR LOW BONE MASS AT MATURITY AND LATER

A decline in estrogen levels whether due to menopause or removal of the ovaries causes an increase in bone turnover. An accompanying change in bone cell metabolism causes less bone to be replaced.<sup>12</sup> As bone metabolism changes with age and with menopause, so does calcium metabolism. Calcium metabolism and bone metabolism are closely related, but whether osteoporosis results from an age-related disorder in calcium metabolism or a calcium deficit is a subject of ongoing debate.

Researchers have documented alterations in calcium metabolism with age in 4 major areas: calcium absorption, calcium excretion and the fate of calcium which is retained, i.e. bone mass and volume. The fourth area is balance, i.e. the difference between calcium intake and calcium excretion.

### *Calcium Absorption*

Efficiency of calcium absorption decreases with age and to an even greater extent, with menopause.<sup>25, 26</sup> Decreased absorption seems offset in normal individuals by high calcium intakes.<sup>27</sup> This relationship is not found in people with osteoporosis.<sup>26</sup>



### Calcium Excretion

Calcium excretion increases with menopause, presumably because estrogen decreases.<sup>2, 16</sup> These age-related changes are accompanied in women, ages 25 to 65, by a relatively low calcium intake of 581-687 mg.<sup>28</sup> This compares poorly to the Recommended Dietary Allowance (RDA) of 800 mg suggested by The National Academy of Sciences.

### Calcium Consumption

When postmenopausal women are treated with either estrogen or a daily calcium supplement of 800 mg or 1.04 g, the decrease in bone mass and area is smaller than the loss in untreated postmenopausal women.<sup>10, 19</sup> If more calcium is ingested, more calcium is retained by the body.<sup>25</sup> Low calcium intakes mean larger calcium losses. It appears that greater than average calcium intakes by young adult women may delay calcium loss and bone loss. The National Institutes of Health recommended that calcium intake should be equal to at least 1 to 1.5 grams, either from supplements or food sources.<sup>29</sup> Whether this results in decreased osteoporosis is not yet known.

### Vitamin D

Vitamin D is essential for calcium absorption. However intakes over the current daily recommended level of 200 I.U. for women over age 23 have not been shown to alter the rate of bone loss.<sup>7</sup> An alteration in Vitamin D metabolism or unrecognized Vitamin D deficiency may contribute to osteoporosis in the elderly since vitamin D helps the body to absorb calcium in the intestine. Vitamin D also mobilizes calcium from the bone when plasma calcium levels drop.

### Pregnancy and Lactation

The effect of pregnancy and lactation on bone volume and density in later life is conflicting. Chan *et al* found lactation is associated with decreased density in women 18 years or younger.<sup>29</sup> Lamke found a small increase in bone mineral content during both pregnancy and lactation.<sup>30</sup> And Goldsmith reported a greater proportion of women with poorly mineralized bone among women who had lactated.<sup>31</sup> However, Goldsmith found that relationship did not hold if a woman had used oral contraceptives at any time.

### Aluminum Containing Antacids

Aluminum containing antacids have been shown to decrease calcium balance. The effect is most pronounced when low levels of calcium and larger doses (240 ml, or 450 ml per day) of antacid are consumed. When 800 mg of calcium and small doses of antacid (90 ml per day) were consumed, significant decreases in calcium balance did not occur. The authors of 1 study tested Maalox, Gelusil, Mylanta and Amphojel and concluded that long-term use of aluminum containing antacids may contribute to skeletal demineralization. Other nonprescription aluminum containing antacids which were not part of the study are Di-Gel, Roloids, Gaviscon, Delcid, DeWitt's Antacid, Kudrox, Nephrox, Camalox, Kolantyl, Magnatril, and WinGel. These aluminum containing antacids may have a similar effect.<sup>26</sup>

### NUTRITIONAL RECOMMENDATIONS

Although the causal relationship between skeletal volume and mass and osteoporosis remains to be finally proven, the most promising avenue for preventing osteoporosis seems to be to accumulate as much bone tissue as possible before age and menopause related loss starts. The current body of research does not support dietary recommendations beyond those for general health maintenance during growth and development (RDA's). However, pay close attention to research being conducted on calcium balance in women as they approach and go through menopause. Recommended levels exceeding 1 gram of calcium per day may be forthcoming. For guidance regarding protein consumption for preventing osteoporosis, the RDA is recommended. The RDA is based on protein requirements for health and growth rather than blanket percentage estimates which vary with energy intake. For example, the RDA for protein for a moderately active, 130 pound, 35 year old woman is 44 grams. The protein recommendation for the same woman would be 75 grams if her allowance was based on 15% of a 2000 calorie per day diet.

A weight-bearing exercise program, such as bicycling, running or walking may help to prevent osteoporosis, especially if started before menopause.

### REFERENCES

The references noted in this paper are available by contacting the State Dept of Public Health.

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STATESMAN INVESTMENT ADVISORS, INC.

## October 1984 Morbidity Report

Disease	Oct. 1984 Total	1984 to Date	1983 to Date	Most Oct. Cases Reported From These Counties
Amebiasis	3	60	34	Clinton, Sioux
Brucellosis	0	2	4	
Chickenpox	104	6517	5613	Scattered
Compylobacter	34	272	316	Scattered
Cytomegalovirus	1	11	11	Scattered
Eaton's Agent infection	2	33	107	Clinton, Dubuque
Encephalitis, viral				
Erythema infectiosum	0	51	25	
Gastroenteritis (GIV)	1083	10587	10297	Scattered
Giardiasis	56	327	254	Scattered
Hepatitis, A	5	46	24	Scattered
Hepatitis, B	6	84	72	Scattered
Hepatitis, Nan A-B	0	14	38	
Hepatitis type unspecified	0	9	12	
Herpes Simplex	104	782	848	
Herpes Zoster	0	2	6	
Histoplasmosis	1	17	15	Polk
Infectious mononucleosis	14	120	157	Scattered
Influenza, lab confirmed	0	176	207	
Influenza-like illness (URI)	2529	34339	33409	Scattered
Legionellosis	0	3	6	
Malaria	0	2	3	
Meningitis aseptic	5	54	136	Scattered
bacterial	8	99	135	Scattered
meningococcal	1	22	18	Polk
Mumps	1	23	44	Linn
Pertussis	2	12	6	Mills, Scott
Robies in animals	10	134	182	Scattered
Reye Syndrome	0	2	2	
Rheumatic Fever	0	0	2	
Rubello (German measles)	0	1	0	
Measles	0	0	0	
Salmonellosis	19	206	300	Scattered
Shigellosis	52	84	58	Dubuque, Jasper, Johnson, Winn, Woodbury
Toxic Shock Syndrome	1	13	14	Des Moines
Tuberculosis total ill	6	55	60	Scattered
bact. pos.	6	50	42	Scattered
Typhoid Fever	0	0	0	
Venereal diseases: Gonorrhea	363	3701	3841	Scattered
Syphilis	0	11	21	

Other Non-Reportable Diseases: Ascario — 1, Johnson; Chlamydia — 2,  
Polk; Clonorchiasis — 1, Clinton, 1, Decatur, 1, Johnson, 2, Polk; Hook-  
worm — 1, Polk; Ureoplasma ureolyticum — 1, Clinton, 1, Dubuque.



News About Colleagues

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## ABOUT IOWA PHYSICIANS



Dr. Tom Zimmerman recently began family practice at the new Nevada McFarland Clinic. A native of Sioux City, Iowa, Dr. Zimmerman received the M.D. degree at the University of Nebraska School of Medicine. . . . Dr. Daniel Hudec recently joined Dr. E. J. DeLashmutt in Fort Madison. Dr. Hudec received the M.D. degree at Georgetown University School of Medicine in Washington, D. C.; served his general surgery residency at Akron City Hospital in Akron, Ohio; and was chief resident in general surgery for one year at Mount Sinai Medical Center in Cleveland, Ohio. . . . Dr. Prem K. G. Chandran, member of the Royal College of Physicians and a fellow of the Royal

College of Canadian Physicians, recently joined Drs. C. T. Flynn and Craig A. Shadur in Des Moines. Dr. Chandran is a specialist in internal medicine and nephrology. . . . Dr. David C. Goering recently joined the Peoples Community Health Clinic in Waterloo. Dr. Goering received the M.D. degree at the University of Kansas School of Medicine and completed his internal medicine residency at Kansas University Medical Center in Kansas City. . . . Drs. James T. Worrell and K. Furumoto recently retired from their medical practice in Keosauqua. Dr. Worrell received the M.D. degree at St. Louis University School of Medicine and interned in Seattle, Washington. Dr. Furu-

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moto received the M.D. degree at the University of Texas and interned at University Hospitals in Iowa City. Dr. Worrell located in Keosauqua in 1947 and Dr. Furumoto joined him in 1952.

**Dr. Hormoz Rassekh**, Council Bluffs, and **Dr. Reid E. Motley**, Cedar Rapids, have been appointed to the Federation of State Medical Boards. Dr. Rassekh will serve on the Professional Relations Committee and Dr. Motley on the Articles of Incorporation and Bylaws Committee. Both physicians are members of the Iowa State Board of Medical Examiners. . . .

**Dr. Lawrence C. O'Toole**, LeMars, has received the LeMars Sertoma Service to Mankind award for his community service in LeMars. Dr. O'Toole served on the school board for 20 years. He was a member of Floyd Valley Hospital medical staff 46 years. As a longtime team physician for area schools, Dr. O'Toole is the recipient of a special award from the Iowa High School Athletic Association. . . . **Dr. Monte Skaufle** has entered family practice in Durant. Dr. Skaufle received the M.D. degree at Creighton University School of Medicine in

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Omaha, Nebraska and served his family practice residency in Davenport.

## DEATHS

**Dr. George J. Pearson**, 92, Burlington, died September 5 at Bryn Mawr, Pennsylvania. Dr. Pearson received the M.D. degree at the U. of I. College of Medicine and practiced in Burlington for many years. He was a member of the Iowa Academy of Ophthalmology; American Academy of Ophthalmology and Otolaryngology; American College of Surgeons and American Society of Railway Surgeons. Dr. Pearson was a life member of the Iowa Medical Society.

**Dr. John G. Goggin**, 94, Ossian, died October 6 at the Winneshiek County Memorial Hospital in Decorah. Dr. Goggin received the M.D. degree at the University of Illinois School of Medicine and interned at St. Elizabeth Hospital in Chicago. Dr. Goggin began medical practice in Ossian in 1934, retiring in 1981. He was a life member of the Iowa Medical Society.

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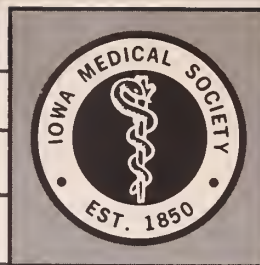
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## IN THE PUBLIC INTEREST



### Rural Iowa: Diagnosis Uncertain

**P**LEASE CHOOSE the word you think best describes the present and future of health care delivery in rural Iowa: *uncertain, changing, declining, okay, all, some or none of the preceding.*

Whichever answer you pick, one of these or another, please recognize our goal here, more importantly, is to stimulate your interest. What do you see ahead for rural Iowans in need of health care services?

This hard question has been addressed many times by many thoughtful citizens. This fall there's been further opportunity for comment. The Health Policy Corporation of Iowa (HPCI), together with the Iowa State Association of Counties, the State Departments of Health and Human Services and area organizations, has conducted four regional forums to help community leaders from rural Iowa analyze their circumstances and look at the options. These sessions have been in Spencer, Red Oak, Mt. Pleasant and Calmar; each has been attended by at least 100 persons.

So you were there as a rural Iowa resident. You heard that we had 150 acute care hospitals in the state 20 years ago. Then you were told there are 131 such hospitals now. Does this mean there will be fewer still when 1985 ends?

A main reference point at the HPCI meetings was a 100-page report called *Delivery of Health Care Services in Rural Iowa*. The report was prepared by Donald W. Cordes, now a consultant after many years in hospital administration.

The Cordes report is an informational aid to help rural community leaders evaluate circumstances, consider options and decide how best to assure health care services for their citizens. The changing nature of Iowa health care delivery — particularly hospital use — is emphasized in the report. Here is an excerpt:

*Occupancy of Iowa hospitals is dropping rapidly.*

A 1977 survey of 94 hospitals with fewer than 150 beds reported an average daily census of 35.2 patients. In 1982, a similar survey found 103 hospitals reporting an average of 27.9 patients. This represents a 21% reduction in hospital utilization over the five year period. The 1983 occupancy figures showed a further reduction of 2% over 1982. Additionally, hospital occupancy has been reported to have dropped dramatically since 1984.

These findings identify the problem clearly. Where the number of patients is low and getting lower, the spreading of fixed costs across this diminished population can only go so far.

Other factors cited in the Cordes report add uncertainty to the Iowa rural health care delivery equation. These include (1) the high percent of elderly residents in rural areas; (2) the pressure and action by government and others to alter and constrict payments to providers; (3) the mandates imposed to assure that admissions to hospitals and other health care facilities are appropriate, and (4) the increasing acceptance by physicians of the need to emphasize outpatient/ambulatory care.

The impact of governmental and other edicts on small and rural hospitals, in communities where there is only one such facility, is tending to be different from the impact on larger hospitals in metropolitan areas.

**T**HE CORDES report offers ideas: Petition local government for increased tax support. Merge or establish relationships with adjacent facilities to achieve greater efficiency and economy. Expand the hospital mission to create a broad-based community health resource with greater service and revenue producing capability.

The times, they are complex. The conditions, they are difficult. The quality, maintain and enhance it; this we must.

December 1984

Iowa Medicine



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**References:** 1. Kales J et al: *Clin Pharmacol Ther* 12:691-697, Jul-Aug 1971. 2. Kales A et al: *Clin Pharmacol Ther* 18:356-363, Sep 1975. 3. Kales A et al: *Clin Pharmacol Ther* 19:576-583, May 1976. 4. Kales A et al: *Clin Pharmacol Ther* 32:781-788, Dec 1982. 5. Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. 6. Kales A, Kales JD: *J Clin Pharmacol* 3:140-150, Apr 1983. 7. Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther* 21:355-361, Mar 1977. 8. Zimmerman AM: *Curr Ther Res* 13:18-22, Jan 1971. 9. Amrein R et al: *Drugs Exp Clin Res* 9(1):85-99, 1983. 10. Monti JM: *Methods Find Exp Clin Pharmacol* 3:303-326, May 1981. 11. Greenblatt DJ et al: *Sleep* 5(Suppl 1):S18-S27, 1982. 12. Kales A et al: *Pharmacology* 26:121-137, 1983.

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**Before prescribing, please consult complete product information, a summary of which follows:**

**Indications:** Effective in all types of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings and/or early morning awakening; in patients with recurring insomnia or poor sleeping habits; in acute or chronic medical situations requiring restful sleep. Objective sleep laboratory data have shown effectiveness for at least 28 consecutive nights of administration. Since insomnia is often transient and intermittent, prolonged administration is generally not necessary or recommended. Repeated therapy should only be undertaken with appropriate patient evaluation.

**Contraindications:** Known hypersensitivity to flurazepam HCl; pregnancy. Benzodiazepines may cause fetal damage when administered during pregnancy. Several studies suggest an increased risk of congenital malformations associated with benzodiazepine use during the first trimester. Warn patients of the potential risks to the fetus should the possibility of becoming pregnant exist while receiving flurazepam. Instruct patient to discontinue drug prior to becoming pregnant. Consider the possibility of pregnancy prior to instituting therapy.

**Warnings:** Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

**Precautions:** In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

**Adverse Reactions:** Dizziness, drowsiness, light-headedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, e.g., excitement, stimulation and hyperactivity.

**Dosage:** Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

**Supplied:** Capsules containing 15 mg or 30 mg flurazepam HCl.



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**STANDS APART**

15-MG/30-MG CAPSULES



See preceding page for references and summary of product information.  
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*The New York Academy of Medicine*

**DUE IN 4 WEEKS UNLESS RENEWED**  
**NOT RENEWABLE AFTER 8 WEEKS**

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